THE GEOGRAPHICAL MAGAZINE

VOLUME I, NO. 1 ONE SHILLING MONTHLY MAY 1935

THE GEOGRAPHICAL MAGAZINE

Editor *Michael Huxley*

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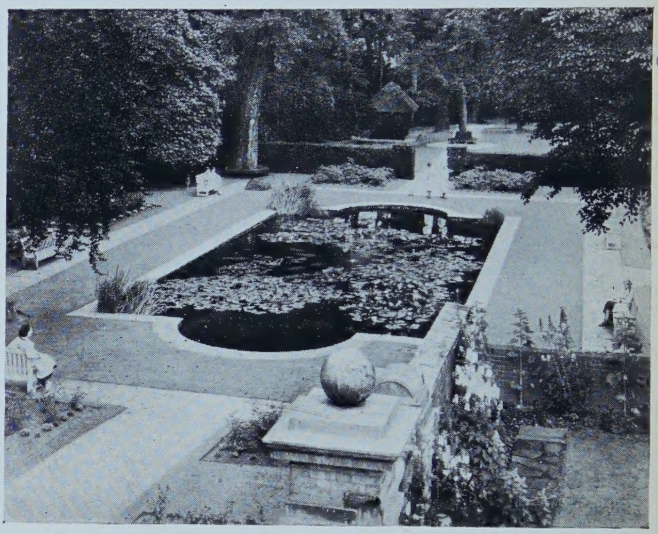
CADBURYS GIVE A LEAD TO BRITISH TRADE RECOVERY

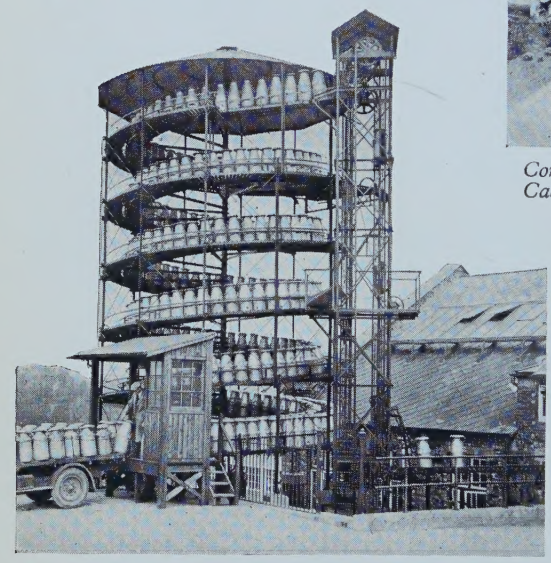
During the last few years, the sales of Cadburys Milk Chocolate have gone up and up and up. *Up 57.3% since 1928.*

In the same period, the price of Cadburys Milk Chocolate has come down and down and down. *Down from 1/- the ½ lb. block in 1928 to 7½d. to-day.*

Cadburys have given a lead to British trade recovery by passing on to the public the full savings from falling markets and more efficient manufacturing.



Come into the Garden! A snapshot taken within the grounds of Cadbury's giant factory at Bournville.



The Milky Way. The churn tower at Cadburys milk-condensing factory at Knighton.

A glass and a half of fresh, full-cream, *British* milk is concentrated in every ½ lb. block of Cadburys Milk Chocolate.

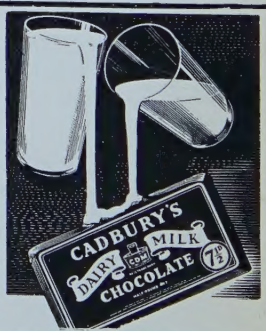
To ensure constant supplies of *fresh* milk, Cadburys have built milk-condensing factories in the heart of the milk-producing areas. Here the milk is concentrated; only the moisture is driven off; all the food value is retained.

1932 — 11 million gallons, 1933 — nearly 13 million gallons, 1934—14¾ million gallons. That's how Cadburys milk order grows — and benefits British agriculture.

CADBURYS

MILK CHOCOLATE

A glass and a half of fresh, full-cream milk goes into every ½ lb. block



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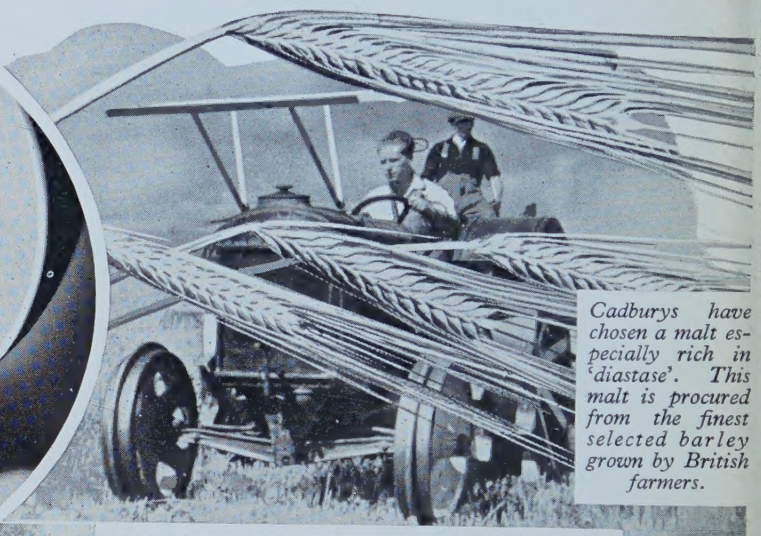
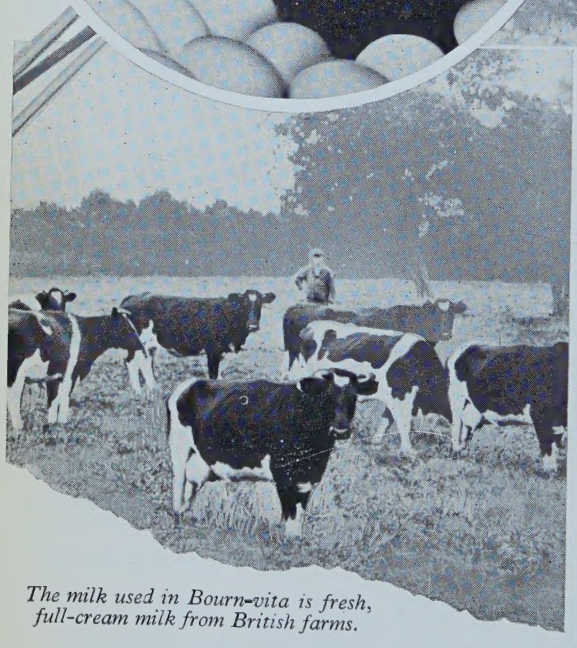
HOW A FAMOUS FOOD-DRINK IS MADE . . . *The secret of Bourn-vita*

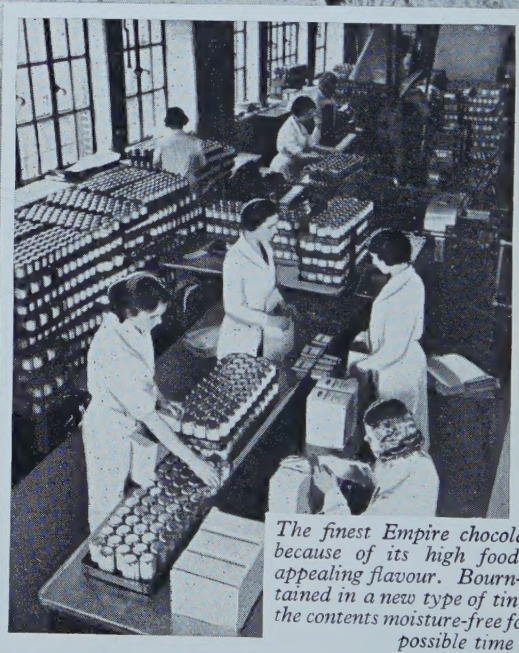
Only new laid eggs from British farms are used. Every egg is 'candled,' and this results in only eggs of excellent quality being supplied.



Cadburys have chosen a malt especially rich in 'diastase'. This malt is procured from the finest selected barley grown by British farmers.



The milk used in Bourn-vita is fresh, full-cream milk from British farms.



The finest Empire chocolate is added because of its high food value and appealing flavour. Bourn-vita is contained in a new type of tin which keeps the contents moisture-free for the longest possible time

Bourn-vita is a delicious combination of British malt, new laid eggs, full-cream milk and finest chocolate. This nourishing tonic food supplies the extra energy your body needs and that summer foods lack. Because of its richness in diastase, Bourn-vita actually helps you to digest your other food. Start taking it to-night and you will enjoy better sleep and wake up full of vigour. Bourn-vita is a Cadbury product.

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For **SLEEP**

and **ENERGY**

HERE IS YOUR BEST ASSURANCE that you can keep fit to meet the demands that modern life makes upon your energies, without straining your nerves, without sapping your vitality—BOURN-VITA! It is a natural digestive. It helps to digest your other food, and thus enables you to get better sleep and to wake up thoroughly refreshed and full of energy. Bourn-vita is also a valuable food—one of Nature's finest waste-repairers and energy-makers. It is a delicious combination of British malt, new-laid eggs, full-cream milk, and finest chocolate. Start a course of Bourn-vita this very night.

Cadbury's

BOURN-VITA

A scientific combination of British malt, fresh milk, new laid eggs and chocolate.

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CHOCOLATE-MAKING
under Ideal Conditions

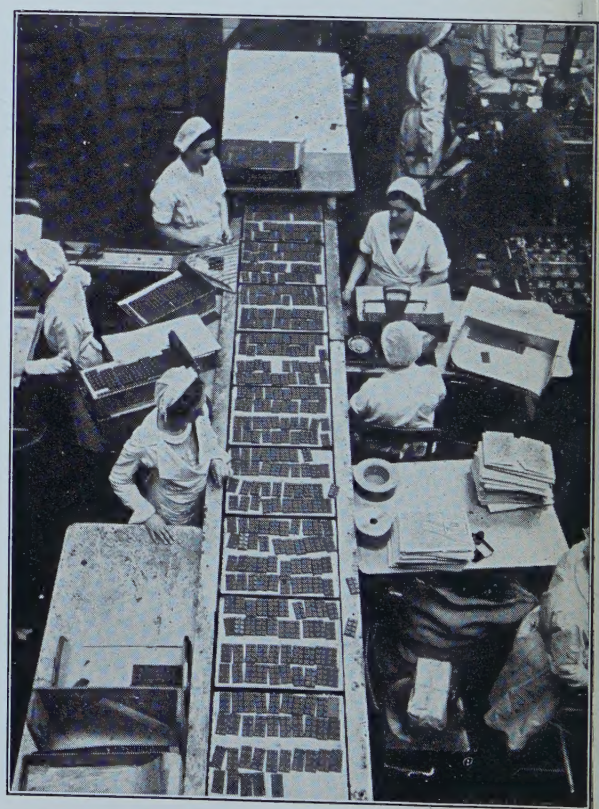
See them at Bournville's

FACTORY IN A GARDEN

(1) *At a Bournville window. Cadbury's Factory in a Garden is planned to admit the maximum of fresh air and sunshine into every one of its spacious rooms.*

Every year about 150,000 people visit Bournville to see what Cadbury's mean by "ideal conditions." In a garden setting they find a vast factory as clean as a dairy. White-tiled walls ; shining copper vessels ; gleaming steel machines ; white-overalled workers. They see handling reduced to a minimum by modern mechanical methods. They see how the purity of ingredients is continually watched by a large staff of analytical chemists. And they come away attaching a new importance to the Bournville motto:– "Absolutely Pure."

(2) *In the Swim. Bathing is a very live feature of the recreational activities at Bournville, where over a hundred acres of sports grounds have been laid out for employees.*



(3) *The Never-ending Line.* 1-*oz. blocks of Cadbury's Milk Chocolate are carried on a conveyor to the machine for wrapping at the rate of* 36,000 *per hour.*

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HOW THE MILK GETS INTO THE CHOCOLATE

Cadburys take the 'cream' of Britain's richest pastures

The tests of milk made by Cadbury chemists last year were many more than were made by the Public Analyst for an advanced city of 1 million inhabitants.

16 million gallons of fresh, full-cream milk were used last year in Cadburys Milk Chocolate. A scene on one of the 1,124 British farms from which Cadburys make daily collections.

The milk goes to meet the chocolate. A glass and a half of this dairy milk is used in every ½ lb. block. To ensure the milk being constantly fresh, Cadburys have established milk-condensing plants in the heart of the milk-producing areas.

You know that by milk, Cadburys mean full-cream milk, pure milk, fresh milk, *British* milk. That's why you can taste the cream in Cadburys Milk Chocolate. That's why every purchase of Cadburys Milk Chocolate is a direct aid to British Agriculture.

Adding the milk to the chocolate within a few hours of milking. Only the water is driven off. All the food value and precious vitamins are retained.

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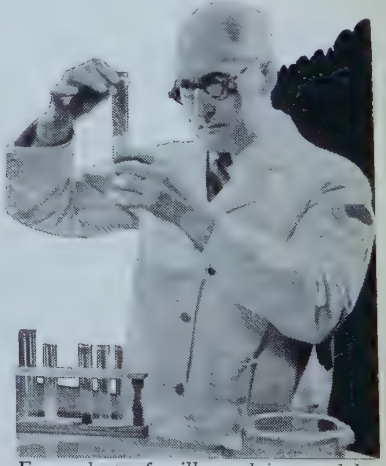
HOW CADBURYS GET 1lb OF MILK INTO A ½lb OF CHOCOLATE

The fresh, full-cream milk is collected daily by Cadburys from 1,400 British Farms. Last year, Cadbury's milk order for their chocolate was for 14¾ million gallons.

The milk is hurried from the farms to Cadbury's milk-condensing stations where the water only is driven off. Above is shown the churn tower at the condensing station at Knighton, Staffordshire.

The milk, condensed by evaporation to the consistency of cream, is added to the chocolate. It takes 1lb.(weight) of the original milk to make the quantity of concentrated milk that goes into a ½lb. block.



Every drop of milk used is tested by Cadbury's own chemists for purity and butter fat content. The milk for Cadburys Chocolate is exceptionally rich in butter fat.

In the milk used by Cadburys for their chocolate, the minerals, the vitamins A, B and D and the nourishment are preserved. The milk that is actually incorporated in the chocolate has weight for weight about 8 times the food value of the original milk. ***There's concentrated nourishment for you !***

Finlay Colour Photograph

F. Kingdon Ward

The Lake near Shugden Monastery, Tibet

Foreword

THE Spaniards have a saying: "Geografía manda"—"Geography dictates." We may ignore her commands, but we do so at our peril: witness the difficulties which occur when a theory, deduced from events peculiar to a certain environment, is applied in a different one; when other nations, instead of obeying the rules as understood by ourselves, insist on running true to the form imposed by the lands which gave them birth; or when, to the confusion of those who wield local economic power, a sudden increase or shrinkage takes place in the world's supply of some staple commodity.

Geographical facts are, indeed, the bones of history, politics and economics as well as of most other subjects concerned with the outward manifestations of human life. Unfortunately, these bones have the reputation of being, like those seen by Ezekiel, very dry. The question may well be asked that was asked of him: "Can these bones live?"

To make them live will be the chief aim of THE GEOGRAPHICAL MAGAZINE. With this aim in view, our contributors will depict the geographical background of events historic and present; the physical conditions in which industrial, agricultural and maritime populations are living throughout the world; the works of construction, destruction and conservation performed by men in turning the earth to their own use; the ways of travel; the places to which men are drawn from afar by their desire for study, worship, sport or relaxation—in short, the development of the earth as the workshop and playground of mankind. Other contributors will describe their experiences in little-known lands and among primitive peoples, the results of important geographical expeditions, and the life of animals in relation to their environment.

We have thus set out to do something which has never before been attempted in this country. We shall try to provide articles which are at once short, readable and authoritative and, by planning them in series, to secure the advantages of world-wide comparison. If we succeed, I believe that readers of this magazine will obtain from it an understanding of world problems which no other periodical can give.

THE EDITOR

Untamed Abyssinia

Africa's Highland Empire

by MAJOR R. E. CHEESMAN, C.B.E.

In recent months a frontier dispute with Italy has brought the name of Abyssinia into the headlines, but most of us know little of the picturesque realities which lie behind it. No one is better fitted to describe them than Major Cheesman, who was H.M. Consul in North-western Abyssinia from 1925 to 1934

Perhaps the easiest way to visualize Ethiopia, better known outside official circles as Abyssinia, is to imagine a European country as big as France and Germany together, raised on a high plateau in North-east Africa and completely surrounded by hot lowland deserts. The resemblance to familiar European landscape continually strikes the traveller through the highlands. The rolling green grass plains of Shoa or Gojjam might easily be mistaken for the Sussex downs; and lakes and rugged mountains provide just such scenery as might be encountered in Scotland. Moreover, the climate for the greater part of the year suggests sunny September days in England. The similarity is of course superficial, and does not extend to the fauna, flora or soil, which have little affinity with those of Europe and are unmistakably African. The mountains and rocks are basalts of volcanic origin, and the cool climate is caused, not as in Europe by distance from the equator, for in Ethiopia the sun is very nearly overhead, but by the height of the plateau above sea level.

The Ethiopians themselves are well described as highlanders. They live up among the clouds and mist, for they fear the fierce heat, and even more the fever, of the sandy wastes in the lowlands. The Ethiopian nation is composed of a federation of many different races, of which the Amhara are paramount, having in the course of time subjugated all the others. From them have sprung the emperors and nearly all the Government officials, and in speaking of Abyssinians today it is the Amhara who are usually implied. The aborigines on the plateau were possibly negroid. My own opinion is that the plateau is too cold for negro tribes to colonize successfully throughout the year. In very early times various hamitic tribes arrived from Asia, drove the negroes permanently down to the bottom of the hills and occupied the plateau. In their turn they were driven down the slopes by the semitic Amhara, who came from the Yemen and now occupy, generally speaking, the best lands above the 6000-feet line.

The fear of the hot lowlands by the Amhara accounts for the isolated position in which Ethiopia finds herself today in comparison with other nations. Indeed for centuries in the Middle Ages her very existence was forgotten by the west. Self-sufficing and needing little her fertile land did not produce, and with communications difficult or non-existent, she had no contact with the outside world. The Abyssinians had, however, been converted to Christianity in the early part of the fourth century. Abyssinian emperors carried their campaigns down to the Red Sea and across it to the Yemen; but even in the hour of victory their officers and their men were all casting glances backward to the cool mountains and running streams that they had left behind, with the result that their conquests in the deserts were never consolidated.

The hearts of pagan tribesmen inhabiting arid deserts are a soil in which the seed

Picturesque escarpments rise one behind the other on the way up from the lowlands to the central plateaux. The heights above these gorges, some of which are a mile deep, are the last refuge of the ibex

Lake Tana from Kebran Island. The author's reed-raft ready to take him off after a visit to the island monastery, with a tray of coffee as a present from the monks

Agriculture is still the principal occupation of the Abyssinians, though some of their implements are primitive enough

Photos, Major Cheesman

of Christianity seldom germinates, but that of Mohammedanism flourishes. In its early days, therefore, Islam spread apace round the lowlands of North-east Africa, until the Christians on the highlands were completely encircled by a ring of unfriendly if not actively hostile Mohammedans. This tended still more to isolate the Ethiopians and their trade, and conditions continued thus until the whole of the sea coast had been occupied by the Governments of European powers, who found these areas in a state of anarchy as a consequence of incessant tribal fighting.

Ewing Galloway

Biblical illustration in Abyssinia: Adam and Eve, Elijah and Jonah

In the reign of the Emperor Menelik II (A.D. 1889–1913), Ethiopia awoke from her long slumber to find that not only had she been left far behind in the march of civilization, but she had in addition no outlet to the sea. Negotiations with the French Government resulted in the formation of the Franco-Ethiopian Railway Company and a railway line was commenced in Jibuti, the port of French Somaliland. It crosses the desert first in French territory and then in Abyssinian until it reaches foothills up which it winds and winds, steadily climbing and finally arriving at railhead in Addis Ababa, the Ethiopian capital 350 miles from Jibuti and 8000 feet higher. For the first day of the three-day journey by the usual trains which leave in each direction twice a week, the scenery is of the most forbidding type of treeless desert, broken only by bare rocky hills. Although it seems impossible that any human being could exist there, it supports a sparse population of roving Danakil tribes. They wander with their camels, sheep and goats between invisible wells known only to themselves. They are savage, ruthless and bloodthirsty. Position in the tribe is reckoned on the number of human kills made, and trophies of the victims are collected and exhibited as evidence of prowess in killing.

As these barren lands are left behind and the foothills are entered, we come to country described as semi-desert, where a slightly heavier rainfall encourages an increased vegetation, much of it thick bush forest in which each plant seems to be armed with thorns. Trees, mostly acacias, are tall and graceful. Here can be seen kudu, water buck, zebra, gazelle, buffalo and elephant. The last rise to the 7000- or 8000-feet level brings one to the Abyssinian plateau with its running streams of clear water and pastures of short grass dotted with herds of fine cattle, cornfields, numerous villages, and churches. To the African at least it is a land flowing with milk and honey. Game animals are scarce as the highlands are too thickly populated, but bush buck are seen in the big forests, and oribi on the wide grass plains. The rare species of nyala found on the heights of Arussi is now protected and the shooting of the almost extinct ibex on Simen is prohibited by Abyssinian game law.

The Blue Nile is by far the biggest and the most important waterway in Ethiopia. The water and more particularly the heavy silt carried by the tributaries and the main river during the rainy season form the life-blood of Egypt and its cotton fields. The source of the Blue Nile is a spring in the mountains of Sakala district and is one of the sacred places of Ethiopia. The water

is believed to have healing properties and pilgrims come long distances to drink of it. Little water flows from the spring, but it is soon increased by tributaries and passes as a considerable river into Lake Tana, a beautiful inland sea that is 40 miles across the open water and stands 6000 feet above sea level. About 20 miles after leaving Lake Tana the Blue Nile disappears from the landscape and flows in a gigantic ravine for 400 miles among mountain ranges which tower for more than a mile in height above it on both banks. Then, entering level lowlands, it crosses the Abyssinian frontier and travels for the rest of its journey in the Sudan, to join the White Nile at Khartoum, roughly a thousand miles from Lake Tana.

Both the Blue and the White Nile are being considered together in one general scheme for harnessing their waters for the benefit of irrigation projects in Egypt and the Sudan. It has been proposed that a regulator should be constructed at the outlet of Lake Tana to retain the water which in the rainy season passes through Egypt. There much of the water flows to waste in the Mediterranean, since the dams built across the Nile to retain the water during the dry season are cut to avoid the damage which would be done by floods. The regulator would be designed to retain this surplus until the dry months, when it could be released under control and used on the cottonfields, which by that time require more water than they are able to obtain. It is a big scheme and its problems have been subjected to careful study by irrigation engineers for the last thirty years. If it is undertaken, Lake Tana will be the largest controlled reservoir in the world.

The earliest capitals of the Kings of Ethiopia were at Aksum in the province of Tigrai in the north. Here stands the

Major Cheesman

The Blue Nile, the secret of whose source, in the words of its discoverer, James Bruce, "baffled the genius, industry, and inquiry of both ancients and moderns, for the course of near 3000 years." At this point below the gorges it is easily forded, even by ladies with sunshades

building most reverenced by all Christians throughout the country, for they believe that within it rests the Ark of the Covenant taken from the Temple in Jerusalem by their Emperor Menelik I, the son of Solomon and the Queen of Sheba. The original building was sacked and burnt during a Mohammedan invasion led by Ahmad Gran, who was subsequently killed in 1543. He came from Adal, the desert country round Zeila on the Gulf of Aden. With the church were destroyed what must have been some priceless manuscripts, records and historical documents. In the precincts are the stone pillars and throne on which many of the rulers of Ethiopia have been anointed and crowned. The present building, which in comparison with other churches might be called the cathedral, is the work of Portuguese Jesuit priests who were sent to Abyssinia on a religious and political mission by the Kings of Portugal in the sixteenth century. They and their successors remained until they were expelled in the next century. The first mission was accompanied by four hundred Portuguese musketeers who assisted in the final defeat and death of Ahmad Gran and the rout of his nomad hordes.

By far the most striking ancient remains in Aksum are huge monoliths, most of which lie prone and broken on the ground. They have been examined and reported on by more than one European archaeological expedition. At the base of the monoliths are altars, and the stone itself is decorated with fine sculpture, but as no inscription has been found on them it has been impossible to arrive at any conclusion as to their origin. Sir Wallis Budge in his summary will go no farther than to state that they were set up by kings in honour of a sun god, that the kings were foreigners whose theological opinions were of pagan and not Christian origin, and that the monoliths can hardly be older than the

Major Cheesman

Aksum : at the base of the chief monolith can be seen an altar on which, 2000 years ago, blood sacrifices were offered

Major Cheesman

The mayor of Gondar with his followers. The castle is 16th-century Portuguese work

time of the Ptolemies nor more modern than the time of Ezana, King of Aksum about A.D. 350. An inscription on stone recording the exploits of Ezana has been found in Aksum. The text, written in three languages, Greek, Ethiopic and Sabean or Himyaritic, has been copied and translated by members of the expeditions, with the result that important additions have been made to the known history of Ethiopia. Aksum was subsequently abandoned as the seat of civil government, although it has retained its position as a religious centre. Later capitals at Gondar and Magdala were in their turn deserted until in 1889 the Emperor Menelik II established his court in Addis Ababa, where the coronation of the Emperor Haile Silasi took place in 1930.

The Government of Abyssinia is feudal, although the present Emperor is progressive and is doing his best to introduce more constitutional elements. He is supreme and is virtually despotic, but his policy has to be guided to a certain extent by public opinion and the Church, which are both capable of powerful opposition. One of his more recent innovations is the formation of a House of Lords which acts as a Council of State in an advisory capacity. The members are chosen by the Emperor from the nobility. The Central Government consists of Ministries of War, Finance, Interior, Foreign Affairs and Education. The Ministers are Ethiopians appointed by the Emperor, and foreign advisers are engaged to assist them. Governors of provinces are appointed by the Emperor and are selected from the aristocracy, as the populace would have little respect for the

Wide World

Keystone

Keystone

Above : *Haile Silasi, Emperor of Ethiopia, and his consort in their robes of state*
Below : *Their newly formed bodyguard of lancers, trained by Belgian officers*

rule of a son of the people, however capable he might be. The governor of a province would hold the rank of a Ras, the equivalent of an English duke, or of a Dejazmatch, who would be, by the same reckoning, an earl.

Up till the last reign appointments were hereditary, but more recent nominations have aimed at strengthening the rule of the Central Government by changing the governors round and thus reducing the power which the father to son succession gives to a chief in outlying districts. Provincial governors place their own officials in charge of districts. Taxes are usually farmed, land is the property of the State, and peasants pay a small annual rent, taken in dollars or in kind, and frequently assessed on the number of yoke of oxen employed. Customs (usually so much a mule load) is collected at toll gates on the trade roads and goes to swell the local exchequer. Here again an effort is being made to centralize the customs of all the provinces in one customs service, based on Addis Ababa.

Education is sadly neglected, and unless parents can afford to send a boy to Addis Ababa, or he can gain admission to one of the few mission schools in the country, he has little chance of learning even to read and write his own language, except perhaps through the very inadequate education that the priests, themselves often scarcely literate, can give him.

The Amhara Abyssinian is tall and handsome, and his prominent nose and thin lips are evidence of his semitic lineage. His hair is curly and black, eyes dark brown and complexion sallow to dark but not black. He is intelligent, learns quickly anything from reading and writing to aviation when he gets the chance, is quick-witted, with a keen sense of humour, is a brave fighter when his blood is up but soon tires of the drudgery of prolonged wars. He is either a soldier or a farmer. No other occupation has any real appeal to him, and he looks with disdain on those who dabble in the crafts or trade. A blacksmith who beats out and fixes ploughshares, a tanner, weaver and tailor are the only tradesmen that would be found in a provincial town.

Most of the people are directly occupied with agriculture. On the highlands above 7000 feet wheat and barley grow well. Other corn crops are teff and dagusa, both dwarf millets. Teff is ground for the soft bread cakes that form the staple food of the country. Barley and dagusa are malted and beer is brewed from them. At and below 6000 feet it is too hot for good wheat and barley to be grown and the farmers grow cotton and red pepper, which they sell to the people living on the higher ranges. Red pepper is an essential ingredient of the hot hashes loved by all classes. The cotton is rain-grown and in favoured districts coffee plantations are a source of comparative wealth to the inhabitants.

The countryman's wants are few, corn is plentiful and cheap and no one goes hungry. A cotton shirt and drawers or tight-fitting breeches like jodhpurs and a cotton shawl or *shamma* to throw over the shoulders for dressy occasions are all that is needed in the way of clothes the year through. The official or merchant adds to this a woven wool cape called a *mak*. Although a merchant setting out from his village for Addis Ababa or the Sudan frontier will load his mules with hides, beeswax or coffee for export, his entire stock on the homeward journey will be but a few bales of unbleached calico, needles and buttons.

Litigation may be regarded as a national pastime. The most trivial disagreement in village life is seized on as an occasion for a meeting of the elders and as an opportunity for a flow of oratory on the part of all comers. On Sunday morning church services are well attended, the congregation being largely composed of the older generation. In the afternoon a kind of hockey is played with bent sticks and a

ball of rolled leather thongs by the men and youths of the village. Though the two games can hardly have had a common origin, the rules much resemble those of our own hockey. They are not strictly adhered to, and Abyssinian hockey might well come under the category of dangerous sports.

Towards the western frontier which marches with the Sudan, the border tribes subject to Abyssinia are negroid and belong to a great variety of peoples of a low standard of culture. To the north-east, east, and south-east are the Danakil and tribes having affinities with the Danakil, although they are divided and subdivided into numerous branches or families having slightly different customs and languages. It would not be far wrong to say that they are the result of a hamitic people crossed with an Arab conquering race from the other side of the Red Sea. Those that have any religion have embraced a primitive and unorthodox form of Mohammedanism. They are all fierce and savage fighters and have been left to their own devices by their overlords the Ethiopians. Between these people of the true desert and the Amhara of the high plateau are the Galla. They are Hamites and now occupy a large area of and form a large proportion of the population of Ethiopia, but are mostly settled in the southern part of the country. It was only after many years and many bloodthirsty encounters with them that the Amhara were able to compel them to accept their overlordship, and they now seem to have

Topical Press Agency

Litigation as a national pastime : open-air oratory in Addis Ababa

Major Cheesman

And in lighter moments "clap hands and dance" becomes the theme

settled down to a period of tranquillity.

One of Ethiopia's major problems today is the unsatisfactory conditions on her desert frontiers and the position of the nomad tribes that live astride of them and own no allegiance to any government. When the African littoral lands were occupied by the European powers the boundaries between them and Abyssinia were laid down by treaty and were delimited by such vague definitions as a certain parallel of latitude or a certain number of miles from the coast, with very few references to topographical features on the ground. The reason was that the country was totally unexplored and unmapped and such detail as was shown on the blank spaces that formed the map of the area was either very far from its true position or did not exist. It follows that the nomads whose grazing grounds had been cut through by a line made by foreigners had no means of knowing exactly where the line ran nor any intention of keeping to it if they had. They made full use of the anomalous position, using it for their raiding and counter raiding, making sure they were well to the one side of the undefined line when a punitive expedition from the other side came to look for them, and recrossing the line in the reverse direction when a force from the opposite side was sent in pursuit.

This unsatisfactory and explosive state of affairs has been going on spasmodically from the time the first treaties were made, in some cases about thirty years ago. It would, indeed, be extremely difficult for a Boundary Commission to operate on some sections of the frontier. For example, although two outstanding expeditions, both led by Englishmen, have explored the Danakil desert in the last few years, neither of them did so under the auspices of the governments concerned. All previous at-

mysterious transaction in streets of Asmara. This byssinian-Somali lady wears r hair (and her baby) in the ight of local fashion

Shell Aviation News

ese two Danakil warriors belong to the Asaeimara, the tribe ich recently murdered a French administrator. Until he has led at least one man, a Danakil is not allowed to wear a nb or a feather in his hair or to decorate his knife with brass silver. The left-hand warrior was killed shortly after this otograph was taken

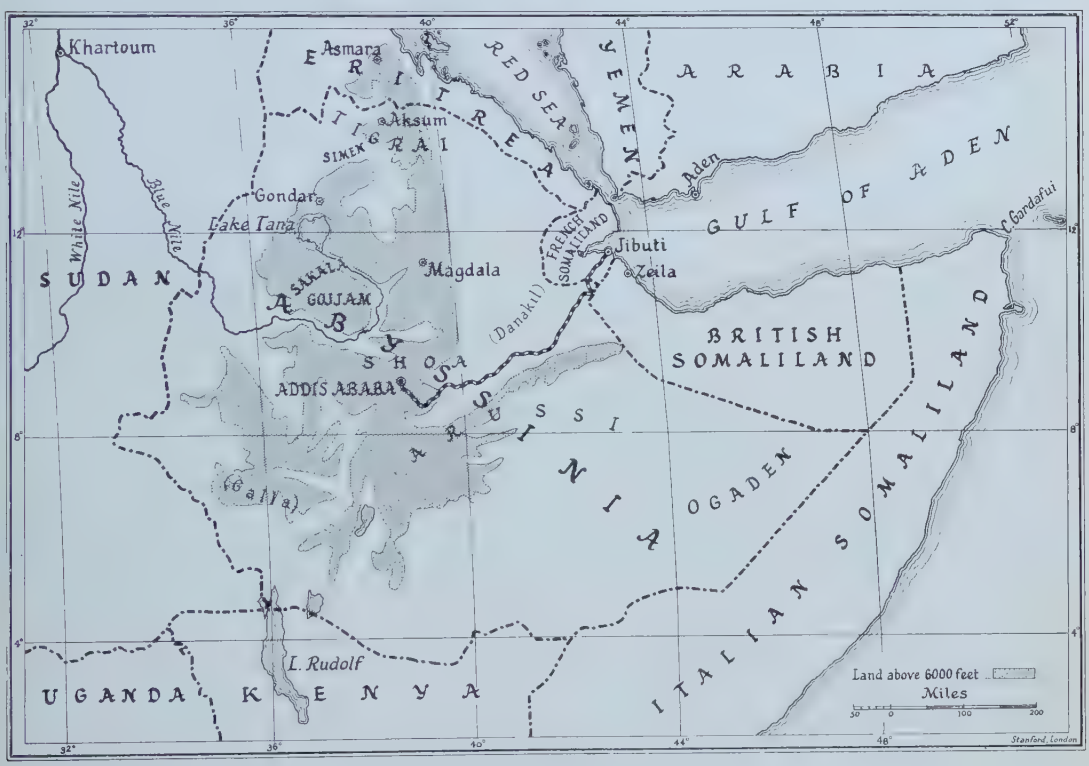
Wilfred Thesiger

Topical Press Age

An Abyssinian chief in full war paint, complete with lion's mane

tempts by Europeans to enter and explore this desert had ended in the massacre of the whole party, so that no one had returned to tell the story.

An Anglo-Ethiopian Boundary Commission has been operating on the boundary of British Somaliland since 1932, and has, in 1935, almost completed its objective, the fixing and demarcating on the ground of the boundary between British Somaliland and Abyssinia, so that a more satisfactory state of affairs on this frontier can be looked forward to in the future. The boundaries between Abyssinia and French Somaliland and Abyssinia and Italian Somaliland remain undemarcated. The unsatisfactory local conditions that must exist on an undemarcated, almost featureless, desert frontier have been exemplified recently and have resulted on the one hand in the massacre of a French administrative officer and his men at the hands of a raiding Abyssinian subject-tribe, the Asaeimara, and on the other in a clash of arms between Italian colonial troops and Ethiopian forces. Although politically there is no connection between the two incidents, which took place 400 miles apart, the immediate cause is the same—an undemarcated frontier ; and from such incidents serious international complications are always liable to arise.



The Lake District a National Park?

by HUGH WALPOLE
and PROFESSOR PATRICK ABERCROMBIE

Not only Englishmen but all the English-speaking peoples can claim as part of their heritage that handful of lakes and fells which has inspired so many writers, from William Wordsworth to Hugh Walpole. To keep it unspoiled for ever as a National Park is the aim set before us by Mr. Walpole and Professor Abercrombie, who holds the Chair of Civic Design in the University of Liverpool

I HAVE been asked to say something about the character and uniqueness of the beauties of the Lake District, and to emphasize, if I can, why it is that that uniqueness can so easily be destroyed, and why it is that for the sake not only of England but of the whole world that beauty must be preserved.

This threatening danger to which so many of us are alive is no new thing. When Mr. Gray, the poet, drove through the 'fearful ravines' of Borrowdale in the 18th century the invasion began, and very soon after that it was the custom of all sorts of visitors to ride and drive and walk from valley to valley, from pass to pass. Wordsworth saw his beloved peace invaded and cried aloud. By the middle of the 19th century it was the pleasant fashion to tour the Lakes. Then came the railways and Ruskin's impassioned dismay. From then until now it has seemed to those who love these quiet places that there is a sort of devil working in man's mind, determining that these beauties shall be destroyed if human ingenuity and obstinate persistence can achieve the destruction. There are some places in the world too great to be endangered by man's childlike passion for ruining the treasures he has been given, but the Lakes is not one of these, and that for three special reasons.

The first is its actual content. The space that it comprises is extraordinarily small, and yet the beauty within that space is so quickly varied that a great deal of its beauty lies in its contrast.

The second reason is that in spite of its pastoral scenery there is a real wildness and even savagery about some of its aspects, and this same wildness is of extreme importance to England. England has not today many wild places left.

The third reason is that very much of its beauty depends upon its ever-changing colours. I have travelled very considerably about the world, and I will not pretend for a moment that our Lake District can rival the majesty of the Himalayas, Pyrenees or the Alps. But I know no place where the contrast of colours is so swift and so marvellously vivid. I hope I may be forgiven if I quote here from a passage from one of my own books, only because I try to express in that page some of the intensity and contrast of that beauty. You may, I fear, call this a purple passage, but it is positively true that the Lakes more than anywhere else in England provide purple passages by actual personal right.

"The blue cold sky ranged like a sea infinitely high and remote from change; the tops of the larch and birch and fir suddenly, if they were high enough, struck a hard stainless light and were edged like cut paper, but so soon as the feathering vapours of mist rolled curtain-like across the scene colour so rich and varied began that the sky seemed to belong to another

infinitely remote existence, unactual and a planet away.

"The mist was neither ascending nor descending in clouds; it was not thick enough for form, it only caught the sunlight and transmuted it, and that sunlight, joyfully enclosed, glowed within, an imprisoned fire.

"It is the quality of this country that with a structure of rock, naked fell and filled mist. . . . And yet, with all this dimness the hills were strong, striking deep into the Lake and, where they topped the mist, hard-ridged against the chill sky. And on Skiddaw there was a sudden flame-shaped crest."

Within this small extent of ground, this contrast of ferocity and pastoral beauty, this constant pageant of colour, everything is so immediate to the eye of the observer

G. P. Abraham

Storm over Derwentwater

dark grim water, it has the power of breaking into an opulence of light and colour. So the Lake that could be cold as driving snow, harsh like shadowed steel, fierce with white foam as a bird's feathers are blown angrily by storm, now was streaked and veined with shadows of the grape that trembled, as though a hand gently stroked its surface. This trembling was not cold nor wind-swept, but burned with the sun-

that the slightest changes can spoil and destroy the whole effect. One ugly villa, one petrol station, one line of pylons against the sky, and then is the perfect peace of English beauty ruined and spoilt. It cannot, like other districts, be saved by space or distance, and there especial beauty is of such distinctive personality that it can never be repeated elsewhere.

Take for example so simple a village as

J. Hardman

Blossom-time near Windermere

that of Patterdale at the head of Ullswater. Walk the meadows and cross the bridge over the Goldrill stream near the farm; walk under the fell past Bleawick; wander over Silver Hill and then drink in the view over the Lake to Stybarrow and Helvellyn beyond, and in this very small square of ground you have almost every beauty, pastoral and mountainous, that nature can offer you. There is the farm, the running stream, the quiet meadows, the Lake, very gentle and quiet perhaps at this evening hour, and the fiercer ridges of Helvellyn darkening against the afternoon sky. Here there is the perfect peace of pastoral England. And then, within a few miles, stand on Grange Bridge and you seem to be on the edge of an almost terrifying loneliness. Grange is one of the most beautiful villages in all the world, and in spite of a new house or two has an imperturbable security of centuries of history. The river under the bridge can fall to a mere trickle and then suddenly the clouds darken above Borrowdale, the rain descends, and a few hours later there is a ferocious stream swirling along to the lake. At such times the hills close in about the village as though they would fall upon it. And you can stand beside the Bowder stone and look over into Borrowdale far into the waste places, where Stye Head runs up to Gable, and no mountains in the world, however great their size, can give a stronger impression of implacable impregnability.

Within half an hour's run from Keswick you can find yourself on the slopes along to Esk Hause as alone there as you are likely to be in this world, and alone with an almost incredible beauty, for the slopes

of the hills here are so intimate and every colour and shape so constantly changing that man and his affairs seem trivial and unimportant. It is at Stye Head, by the way, that there is a never-ceasing battle between those who would have here a motor road and those who know that if the peace of the fell and tarns here is lost something lovely is irrevocably gone from the world.

This brings me to the important question of the preservation of the Lake District for ever as a National Park. When you discuss this question with people they murmur with a kind of absent-minded benevolence the name of the National Trust. But the National Trust cannot possibly go on for ever. Its generosity, its brave persistence, its unobtrusive good taste and self-control—it is surely time someone spoke openly of these things. For years now the National Trust has continued to save one beauty after another for England and although everyone is grateful no one seems to speak a word.

Often enough the work of the National Trust is only half done because of financial inabilities, and all over the Lake District there are pieces of ground nobly saved, but there are pieces of ground near them that also should be rescued. For example, Glencoin Woods by Ullswater are the country's for ever, but the whole of Glencoin Park should belong to the country also. So, too, all the Manesty Woods of Derwentwater are National Trust, but the ground above Grange nearby may be built over at any moment for commercial gain. Yet there is much to be thankful for. Buttermere and Crummock have recently been saved for the country and how wonderful a thing that is. There is public opinion too. Only the other day some bright spirits wished to cover the wilds of Eskdale with conifers

Will F. Taylor

Ullswater from Glencoin Woods

and at once a storm of protest was roused. It is something for some of us to know that for a surety the little sandy beach at the end of Buttermere, often seen from the distance like a silver band, to the bright green meadows beyond it, often chequered with the shadows from bright golden clouds sailing towards Honister, that this little beach will lie undisturbed, that the meadows beyond it will not be turned into ground for garages and petrol stations, but the battle never ceases to be waged and the point is that it should never be fought at all. This district of lake and fell is so small and so perfect that, with Dartmoor and the Cotswolds and the Yorkshire moors, it should remain intangible and perfect always for the people of England.

Within this generation we have seen the absolute ruin of the Cornish coast. Let us at once without a moment's delay see that the Lake District is preserved in all its quiet, its pastoral peace and remote wildness, its marvellous changing contrast of colour.

Planning the Park

by PROFESSOR PATRICK ABERCROMBIE

The recognition that the Lake District requires planning is comparatively recent; it corresponds roughly with the emergence of the idea that this country should possess National Parks. The loving care that has been bestowed upon the Lakes for more than a century can hardly be called planning; it was rather in the nature of tending. This tending was the work of three famous men, Wordsworth, Ruskin, and Canon Rawnsley. Wordsworth in his *Guide to the Lakes* may have been said to have foreshadowed modern ideas of landscape design as distinct from those of the eighteenth-century practitioners, Brown and Repton, who sought to create as landscape painters rather than to tend as landscape lovers. Ruskin was less constructive, but a prophet in denunciation: his attitude resembled that of the gardener towards rooting dogs or nibbling rabbits. Rawnsley practically created the National Trust as his method of permanent safeguarding. It is significant that these three defenders of the English landscape were all drawn to the Lake District; and the fact that it has hitherto escaped from vandalism is largely due to their work and to the public opinion which grew up under their teaching. Great and lasting as was their work, it did not constitute active planning. It was the project of a National Park which called for more positive action. This project envisaged a much fuller use of the District for the purpose of national recreation, and the adjustment of that use to the special characteristics of Lakeland scenery. The idea of popular use grew continuously from Wordsworth to Rawnsley, but it was not until after the late war that increased ease of access and an increased desire for tramping, climbing and rambling imposed the need of constructive control.

The preparation of a planning scheme for National Parks was advocated with authority in the report of the committee set up by the Prime Minister in 1929. Before this report was issued the counties of Westmorland and Cumberland had already appointed advisory committees for the purpose of preparing regional reports of their areas as the basis of local planning schemes. Finally in 1932 the present Minister of Health obtained the consent of Parliament to the Town and Country Planning Act. Thus there was in existence the threefold stimulus to action of a Government Committee's report explaining the scope and function of National Parks, an Act which provided the legal machinery for planning, and local reports on the greater part of Lakeland. The stage appeared clear and ready for immediate action.

There were, however, two difficulties. In

G. P. Abraham

Looking towards Borrowdale from above Derwentwater

G. P. Abraham

The view from Scawfell Pike looking North, showing the Stye Head Pass

the first place the Government, by its failure to implement the National Parks Report and to set up a national authority over suitable areas, left the financial commitments either to local authorities or to assistance from private sources. The other difficulty was a local one; the area which by common consent should form the Lakeland National Park falls within the boundaries of three counties, Lancashire, Cumberland and Westmorland. The national report recommended that a single regional committee should be set up for each geographical unit, and in particular advised that the Lake District, which at the time was divided between three regional advisory committees, should be treated as such a unit and the advisory committees turned into executive authorities. As there was no National Park authority to take the initiative, the Council for the Preservation of Rural England convened a meeting of representatives of the three counties and proposed that they should set up a single joint planning authority and a central office where the planning scheme might be prepared. It is unfortunate that this economical and effective method of preparing the Lakeland planning scheme was not agreed to. Lancashire and Westmorland, however, at once proceeded to set up regional planning committees for the parts of their counties containing a portion of the Lake District, and after considerable delay Cumberland has followed. The three counties have also recently decided to set up a joint advisory committee in order to secure some degree of common action. It has been strongly urged that this common advisory action (a great deal vaguer in effect than the unity which the National Park Committee recommended)

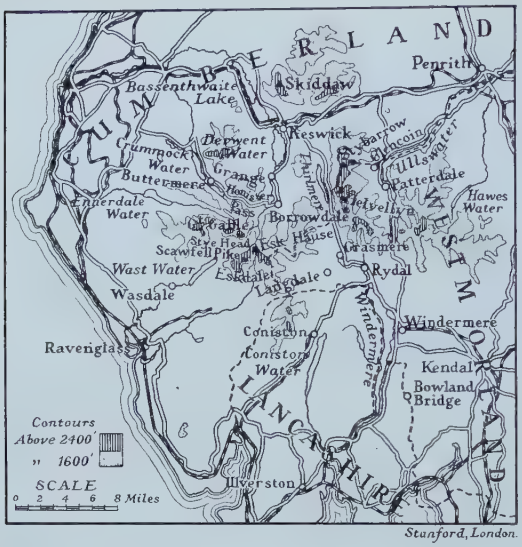
J. Hardman

Bowland Bridge, near Windermere

must be based upon an outline plan and agreed methods of treatment for the whole area. It is only by means of such positive planning, which can secure public approval, that a real approach to a National Park can be made.

The technical and financial aspects of a National Park Plan remain to be considered. The former would require a volume for adequate treatment. Briefly, they would consist of recommendations for (1) zoning or the use of land, to include farming, both enclosed and open, afforestation, building, quarrying, mining, water catchment and open reservations; (2) communications and access, including roads, railways, tracks, paths and general freedom for indiscriminate wandering. The plan need not set out to transfer the whole Lake District from private to public ownership. It need only lay down definite lines for future development. The Lake District fortunately includes extensive National Trust estates and a vast area of commons and high fells of no sporting value, and is thus already nearly as accessible as a national park need be. The plan requires to do little more than register and regularise the present state of affairs. One of the biggest owners has already brought the commons of which he is Lord of the Manor under Section 193 of the Law of Property Act, by which the public has rights of access for air and exercise and the local authorities possess control against abuse.

The question of afforestation is one of the most urgent which require settlement on the basis of a plan for the whole district. In this case it is necessary to reconcile the requirements of the Forestry Commissioners who must buy, wherever they can obtain it at a cheap rate, land suitable for planting and not required for agriculture, and those of the general public who wish



Stanford, London.

to see certain vales kept as nearly as possible in their present condition. The private estates are still in comparatively few hands, and can probably best be dealt with by making agreements under section 34 of the Town and Country Planning Act, by which special arrangements suitable to individual tenure can be made. Here again it is desirable that there should be uniformity of action throughout the district; the owners can best be approached as a whole.

Building is one of those matters which can only be finally dealt with as occasion arises. The plan must therefore set up machinery for controlling it. There are four aspects: the amount of building, its purpose, its placing and its design. How much building is to be allowed? If the neighbourhood of Buttermere and Crummock were open for the fullest amount of building which the available land would hold, its present character would be lost, even though the individual buildings were good in themselves. The National Trust, in the absence of a plan, has set itself courageously to deal with this problem at Buttermere by a system of buying out the building-value when the land is sold. The planning method aims at the same result in advance of a sale. The external appearance of buildings is already being supervised in parts of the district under the guidance of advisory panels set up by the Royal Institute of British Architects and the Council for the Preservation of Rural England. It could be more effectively controlled by a strong central committee acting under the advisory committee of the three counties.

Under the head of communications, the road problem is of primary importance. The outcry which greeted a scheme of the Cumberland County Council for turning several mountain tracks into main roads as a means of providing employment was due to a sound public instinct that these proposals were based upon a local consideration of the matter by the authorities of one county alone.

The financial problems of planning in a National Park area differ somewhat from those which present themselves in other areas, and need special treatment. The chief requirement here is what might be called a 'standstill order', so that the area may remain as far as possible in its present condition, with provision for its increasing use as a National Park. Normal development or exploitation is not desired. That this is reasonable will be realized by comparing (in this respect only) a National Park with a Town Park; no local authority would contemplate exploiting the land in its park for a factory, however tempting the offer. So in Lakeland, after certain areas such as the Windermere, Keswick and Grasmere districts have been set aside for residential growth, every effort should be made to prevent similar development from taking place in Borrowdale, Langdale or Wasdale. The larger landowners would in many cases agree to what is wanted, but Buttermere has shown that it is much more economical to deal with the land in the Lake District as a whole than as each estate comes into the market.

Small as the sum needed may be, in comparison with the object in view, it will be clearly beyond the financial resources of two of the three counties, while Lanca-

J. Hardman

Langdale Valley at Midsummer

shire, though rich, is passing through a difficult time and cannot be asked to shoulder an expense incurred for the sake of the nation as a whole. The danger therefore is that each of the three counties will trim its plans to its financial resources; their technical experts will prepare schemes which are as good as they can be within the financial limitations which prevent them from being good enough. The grant asked for by the National Park Committee was to have been used for the purpose of supplementing local resources. Since this has not materialized, a new association called the Friends of the Lake District was formed last year. The Friends aim at getting a proper plan prepared and are ready to help to raise the money for it. They combine the function of a local branch of the Council for the Preservation of Rural England with that of a society which can be joined by friends of the Lakes throughout the world. They have already contributed towards the Buttermere scheme (which had to be carried out in advance of general planning) and they have offered to pay for the preparation of an outline plan to be adopted by the advisory committee of the three counties. Such a plan would be the only satisfactory means of setting a standard for the Lake District National Park; and the Friends would contribute towards the cost entailed by embodying its features and standards in the statutory regional schemes which are being prepared by the three counties. It remains for lovers of the Lake District to support their efforts, so that its peace and beauty may be safeguarded for ever as a refuge from the clamour of our mechanized civilization.

Our Stone-Age Contemporaries

The Aborigines of Central Australia

by BRIAN MAEGRAITH

STAINES FELLOW OF EXETER COLLEGE, OXFORD

Far away in the deserts of Central Australia the natives still live in Stone Age simplicity, yet many of their social arrangements are more complicated than our own. Was this also the case with our ancestors 10,000 years ago? Dr. Maegraith, a young Australian scientist who has made a first-hand study of these strange people, describes their life in the following article

THE native of Central Australia inhabits a land of great contrasts and disappointments, a land of alternating droughts and floods.

In times of severe drought the country appears brown and barren under the simmering heat of the sun, which is unrelieved except where the thin mulga scrub straggles in the dry creek beds; but when the tropical storms of Queensland drive west and deluge the plains and hills of the Central Territory, great empty river-beds fill and flood, and the water sweeps everything before it. In a few days the rain retreats east again as suddenly as it came. Grass and wild flowers creep up over the plains. Juicy edible plants appear and for a time there is plenty for the native to eat.

After a while the drought comes back. The grass-lands wither; the edible plants shrivel; essential vitamins are lost and famine and scurvy appear among the aborigines, whose living conditions have already been hardened by the advent of the white man's cattle, which eat out the land in the good years, leaving insufficient natural food for the years of drought.

Under these difficult circumstances the native is rapidly dying out or becoming replaced by a curious mission product who spends his time making 'artificial' aboriginal implements for sale to tourists. Nevertheless the genuine stone-age aborigine still exists in considerable numbers in Central Australia in places readily accessible to anthropological students.

The 1000-mile journey from Adelaide to Stuart, the tiny capital of Central Australia, can now be accomplished in under two days, and the comfort of a modern express has replaced the camel trains of former times. The line runs north from Adelaide through settled agricultural land across the 10-inch rainfall line in the Flinders Ranges to the Great Australian Lakes. It then turns sharp west along the shores of Lake Eyre through the country once inhabited by the now extinct Turari tribes.

Seen from the train the great lake appears full of water, but in reality it is bone dry, like all its neighbours. Local legends tell of great sheets of distant water and strange tribes living in the far north-east, but when recently an aeroplane landed in the middle of the lake it temporarily vanished in a cloud of yellow dust!

Beyond Lake Eyre the line turns north again, crosses the dry bed of the ancient Finke River and continues on through the old rail-head at Oodnadatta. From here on the scenery is the same—a sandy waste dotted with dry salt-bush and flat-topped hills lining the horizon.

The Macdonnell Ranges rise suddenly out of the waterless sandhills of the Arunta Desert, running almost due east and west for hundreds of miles across the centre of the continent as a series of parallel quartzite hills, separated by narrow lanes of flat country. There are no foothills, but every few miles the otherwise continuous line of bare hard hills is broken by 'gaps', where

E. O. Hoppé

This Arunta boy should be the champion of his tribe one day at throwing the boomerang

the heights fall abruptly as cliffs to the level of the plain, continuing again a few hundred feet further on.

The township of Stuart lies in the first lane of the ranges within a mile of the famous Alice Springs Telegraph Station and is now reached by rail through Heavitree Gap. To the west across the Missionary Plains and in the Krichauff Ranges is the Hermannsburg Mission Station, and in the country around this and along the dry Finke River gorge are scattered the remnants of the Central Australian native tribes, including the Arunta people.

Anthropological teams composed of experts working along their own lines and equipped with cinematograph cameras, recording phonographs, and so on, have visited the central regions under the auspices of the South Australian Anthropological Society every year since the extension of the rail-head to Stuart in 1929, and have collected many valuable permanent records of aboriginal life.

With such a team the routine examination of the native, with the help of interpreters, proceeds somewhat as follows.

The ethnologist first questions the native about his birthplace, tribal name, and so on, and paints a number on him. The anthropometrist next takes his measurements and passes him on to the physiologist, who records his blood pressure, basal metabolism, etc. The pathologist then thoroughly overhauls him, and finally the bewildered native passes into the patient hands of the psychologist or perhaps is persuaded to sing into a phonograph.

The first South Australian expedition to Hermannsburg arrived in 1929 at the end of a great seven-year drought and found the natives in a desperate position. Except for an occasional rock wallaby or iguana, almost all the natural food, including the edible plants, had disappeared, and many of the natives were forced to exist as best they could on the charity of an already overcrowded Mission. Inevitably scurvy had developed, complicated with every

B. G. Maegraith

From this cave rupa-rupa, *the whirlwind, rushed out and turned into a stone 200 miles away*

other disease due to vitamin deficiency. The older aborigines were literally dying on their feet, their hearts too feeble to go on forcing the blood through their arteries.

Fortunately yeast and lemons were soon procured, and by the time the drought broke in the following year the scurvy had gone. It had been a terrible demonstration of the devastating effects of the appetites of the white man's cattle in the good years before the drought.

The Central Australian aborigine is probably best known to the anthropologist through the studies of the Arunta by

B. G. Macgraith

Round this rock near Kaparilya Springs rain-making ceremonies are performed

Spencer and Gillen, and in many ways this great tribe is still one of the best suited for study, representing as it does aboriginal society in its highest development.

The Arunta marriage arrangements have aroused clouds of angry anthropological controversy ever since they were first described. The tribe is split up into eight marriage classes based on father right, and each member of any given class finds his whole social status and his relationship to other members of the tribe arranged for him. For example, he may marry only into a particular class, and his children, if male, will belong to one class —different from either his or his wife's— and if female to yet another class.

The science of aboriginal genealogy is plain to the youngest Arunta child, but it presents grave difficulties to the European anthropologist, especially when this eight-class father-right marriage system becomes entangled with a tribal organization based on mother right, as it does in the neighbouring Wakanguru people.

The whole Central Territory abounds with natural monuments to traditional tribal events, the so-called totem-places, where the spirits of children dwell, awaiting the approach of a mother. For example, about 50 miles west of Stuart in an inaccessible quartzite cliff face there is a cave out of which in ancient times *rupa-rupa,* the whirlwind, rushed and swept south two hundred miles down the Finke River to its Horseshoe Bend, where it became turned into a stone, now known as the *rupa-rupa* or whirlwind totem-place. The child of any aboriginal mother who first feels her quickening near this spot acquires the whirlwind as its totem.

As among all primitive people, magic plays an important part in everyday aboriginal life. For instance, near the Kapa-

B. G. Maegraith

Corobori dress consists only of red ochre and eagle-down

rilya Springs in the Krichauff Ranges there is a large red sandstone block set aside for the ceremony of making rain. On the appropriate occasion the old men of the tribe rub up a fine powder of shells on the stone and blow up clouds of dust, while the women and younger members of the tribe dance round them, singing lustily.

Magic, again, determines the formula of many of the native ceremonies and dances, or coroboris, some of which—the so-called 'increase' ceremonies—are designed to bring about an increase in the available supply of natural foodstuffs, such as kangaroos, snakes and grubs.

Most coroboris follow the same general pattern, the dance being performed by a group of old men, to the accompaniment of a yelling chorus sitting apart from the performers and beating time with sticks and boomerangs. The performers and chorus are alike arrayed in red ochre and eagle-down stuck on to their naked bodies with human blood and arranged in definite designs according to the dance being performed. The down is stolen with great patience from the nests of the wedge-tailed eagle and is guarded with tender care, being used over and over again and stored in between ceremonies.

There is usually one old man who acts as chief performer and who is more elaborately ornamented than the others, frequently wearing a sacred headdress or *waninga* of sticks and leafy twigs daubed with ochre and eagle-down, the design of which also varies according to the corobori being danced.

While the corobori is in progress the chorus, and often the performers as well, sing songs set for the particular performance. These songs are remarkable for their simplicity and form, ranging from simple octaves to true pentatonic and hexatonic scales. The song for any given corobori always possesses the same form and words.

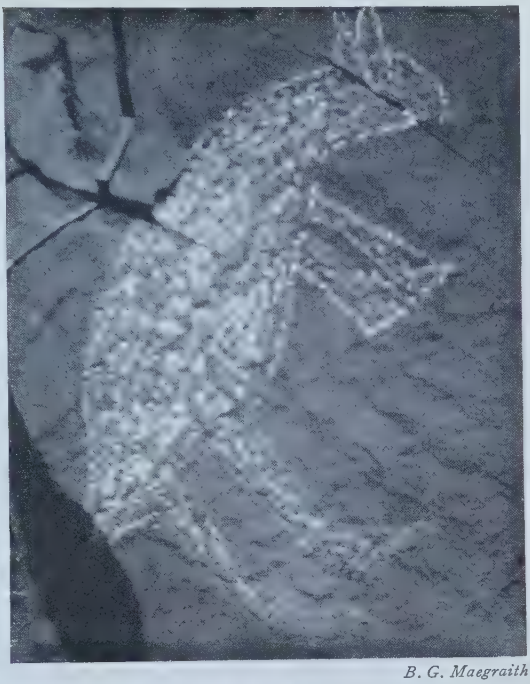
The native is very fond of ceremony, and his rites and dances are legion. When one nomadic tribe meets another the collision is usually peaceful and forms an excuse for a general parade. The women and children temporarily hide in the bush, just in case the strangers are hostile, while the men of the tribes prance up and down in front of each other waving their spears, boomerangs and shields. After a while they weary of this and the tribes meet officially. Soon the men are deeply engaged in talking, comparing marriage classes and so on, and the women begin to creep timidly back from the bush.

The desire of the aborigine for self-expression shows itself in many other kinds of ceremony, such as the long-drawn-out

initiation rites and the wild backward leaps which follow them, and in various forms of art, carving, scratching and crude paintings.

One curious type of painting is found in the caves of Mootwinge in the north-west of New South Wales. The rocky districts of this region are pitted with shallow smooth-walled caves, on the walls of which are found silhouettes of hands and arms and sometimes even feet, drawn in various shades of ochre or in charcoal. These figures have been made by placing the hand or foot over an area smeared with ochre or charcoal mixed with emu fat, and then blowing powdered chalk or ash over it, leaving a black silhouette of the limb outlined in white.

There are hundreds of these figures in the Mootwinge caves, most of them made with the left hand, exactly like the hand silhouettes found in the prehistoric caves



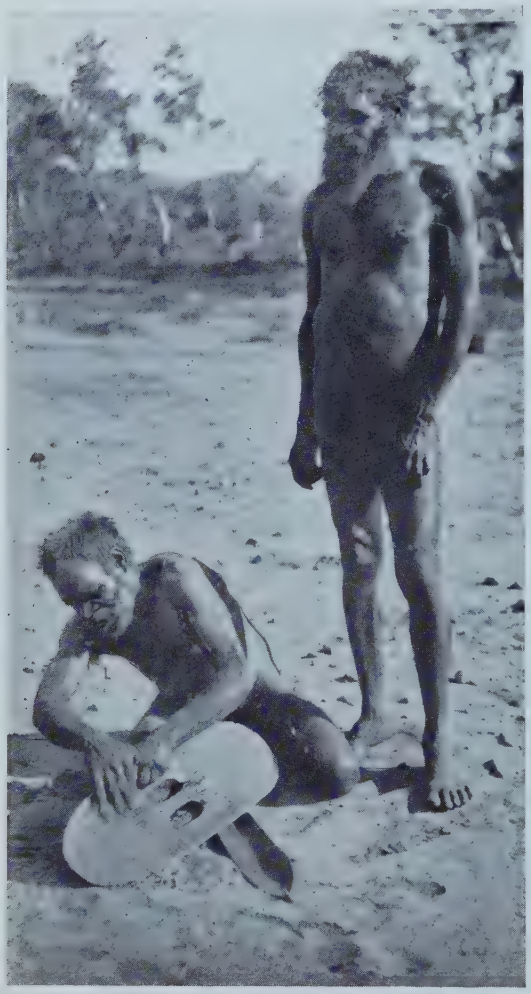
B. G. Maegraith

(*Above*)

Aboriginal rock carving, Mootwinge, New South Wales. The figure of the kangaroo, which is about 3 feet long, was rubbed over with chalk for photographing

B. G. Maegraith

An aboriginal reception committee dancing before a strange tribe



B. G. Maegraith

Making fire by rubbing together a shield and a spear thrower is a tedious business

of Spain. The significance of the use of the left hand is obscure, if it has any meaning beyond the obvious one that it allowed the right hand to remain free. Living natives in the district have no knowledge of the art of making these tracings and profess to know nothing of the people who fashioned the 'Mootwinge hands'.

Rock carvings such as those also found at Mootwinge are executed in the most primitive fashion by the simple process of battering and hammering the rock surface with pieces of some hard stone. Animal figures predominate, particularly those of kangaroos, lizards and emus, some of them almost life size, none of them very lifelike.

The domestic art of making fire is a simple matter for the aborigine, owing to the excessive dryness of the country. A spark is produced by rubbing hard wood against soft (usually by rubbing the spear thrower or *womera* against a shield), and is made to fall on tinder carefully collected from pieces of dead bark and leaves. The tiny fire thus started is soon blown into a blaze.

Cooking is primitive. Wild duck and crows are simply thrown on to the fire, sometimes thinly coated with clay, and then have ashes heaped over them. As a rule very little beyond the bones is left for the dogs. Some edible roots, for example the yam, are also partly cooked in the open fire to enable them to be peeled before eating.

The aborigine is not above stealing food. The Iliaura tribe, for example, collect the seeds of a certain tree which have been laboriously gathered and stored by ants and make a crude form of dumpling from them. The witchetty grub, cooked or raw, is a great delicacy among the Arunta, and the swollen-bellied honey ants are also a favourite article of diet. In the good years snakes and lizards, rock wallabies and kangaroos are much sought after and the tribes form organized hunts for them, armed with boomerangs and spears.

The aborigine using his spear is a magnificent sight. He steals along in a sort of crouching shuffle until he is within striking distance of his prey. Suddenly he springs erect, one leg advanced and his weight poised over his back foot. Then he hurls the spear forward with his *womera* or wooden spear-thrower, pivoting his body about his front leg with the measured grace and co-ordination of a modern athlete putting the weight.

The Central Australian native is essentially a nomad and never settles long in any one spot, although there are some natural springs in the territory which seem ideally suited for settlement.

B. G. Maegraith

When this Arunta athlete hurls his spear with the aid of the thrower, his pose would gladden the heart of a sculptor

For instance, in the north-west Krichauff Ranges there is a narrow sunken plain, in which there still flourishes the vegetation that covered the whole of tropical Australia in prehistoric times. This little valley runs for miles between great sandstone cliffs often less than a mile apart, and in the cool air among the water-holes and springs grows a mass of modern gum trees, ancient cycads and tall palms, whose tops wave hundreds of feet below the level of the surrounding sandstone plains.

It might be supposed that such watering places as this would tempt the aborigine to settle, but he has never adopted them, preferring to travel from water-hole to water-hole through heat and dust for long weary miles, camping by night, sometimes for weeks in the same spot, in his hut or *wirli*, made from gum boughs and mulga bushes. He never travels at night and consequently cannot find his way by the stars, although his detailed knowledge of them shows how carefully he must have regarded them in the long clear cloudless nights.

The Central Australian native is exceedingly tough and hardened to exposure. His physique is generally good. He lives in a country where the heat and dryness have reduced bacterial diseases to an absolute minimum, and his wounds almost never become infected.

In his youth the native's senses are more acute than those of a European. He can see detail at a much greater distance; he can hear better, and his powers of smell are almost animal. This sensitivity, however, becomes rapidly blunted by age and such diseases as trachoma, so that it is not uncommon to see the middle-aged aborigine nearly blind with corneal opacities and sometimes even deaf. White man's diseases such as tuberculosis sweep unresisted through the tribes and are undoubtedly one of the many reasons why the aborigine is dying out so rapidly.

The true Australian natives are very primitive and become progressively so the further south one goes. They seem to be the survivors of several waves of invasion from the north, some of which have been absorbed or have vanished, leaving only a trace behind them. Thus on Kangaroo Island today, a few feet under the soil, are to be found the stone tools of an ancient Australian race, whose culture was even more primitive than that found on the mainland today and whose bones have long since rotted away. Of the true ancestry and antiquity of man in Australia, however, little is known. The whole continent is waiting for someone to dig it up.

B. G. Maegraith

It is surprising to find, hundreds of feet below the level of the Australian Desert, this ancient Valley of Palms

Rajputana

Land of Indian Princes

by DENNIS KINCAID, I.C.S.

What part will the Princes play in an Indian Federation? This question has of late been exercising the minds of statesmen both in Britain and in India. Mr. Kincaid, whose novels of Indian life have been highly praised for their accuracy and impartiality, describes the feudal atmosphere of Rajputana where the traditions of past centuries are still upheld

RAJPUTANA is, as everyone knows, the country of the Rajputs. But who are the Rajputs is a question less easy of answer. According to orthodox Hindu opinion the Rajputs are the representatives of the old heroic Kshatriya caste. In the Hindu comity the Kshatriyas (*cf.* Satrap) are the warriors, to whom are attributed as many duties and privileges as to the Christian orders of knighthood in the middle ages. The Princes of Rajputana are divided into the Solar and Lunar families, claiming descent from either the sun or the moon. The head of the Rajputs is the Rana of Udaipur who is held sacrosanct throughout Hindu India as the direct descendant of Rama, the god-king and incarnation of Vishnu.

Actually these romantic theories have, as might be guessed, little connection with historic fact. The present Rajput clans are late-comers to India. After the fall of the last great Hindu Empire in the 7th century India was invaded by hordes of wild horsemen from inner Asia. They formed one company of the second great folk-wandering of the people of the steppes. Like the Franks they settled on the ruins of a higher civilization and were soon absorbed into the culture of the world into which they came. And just as the Frankish kings called themselves by Roman titles and were accepted by the Gallo-Roman nobles as the representatives of Roman authority, so in time the invaders in India, of whom the chief were the Hunas, were accepted by the Hindu world as the successors of their old rulers. The very name Rajput is significant of this transition.

Mrs. John Wilson

The traditional copper pots in which these servants are carrying water from the well not only keep water sweet, but actually seem to sweeten stale water

It means 'son of a king' and suggests a period when the invaders were recognized to have a special status but were not yet admitted to the full dignity of the old Kshatriya princes. In the same way Charlemagne, before his coronation as Emperor by the Pope, only called himself Patrician.

that he put Muhammad to death, taunted him with his credulity and flung themselves out of the window into the waters of the Tigris far below. Even at this period the traditions of Rajput chivalry were maintained by the fantastic rite of the *johur*: 'the sublime office'. When a Rajput clan

These invaders who became the Rajput clans settled in the Punjab, Sindh and modern Rajputana. Their history in the 7th and 8th centuries is a confused record of epic wars. At the beginning of the 8th century the Arabs invaded Sindh under the command of the beautiful young Muhammad Kasim, the Caliph's favourite. He defeated and killed the Hindu king of Sindh and took his daughters to Baghdad for the harem of the Caliph. But the two princesses, after so enraging the Caliph against their captor by a false accusation

was defeated the men bathed, donned saffron robes, drugged themselves into a frenzy and rushed on their enemies, seeking death; their women meanwhile made a pyramid of their property and mounting it set fire to themselves. This was considered the only way of wiping out the dishonour of defeat, and this rite continued to be celebrated down to the 19th century. After the Arab conquest of Sindh the Sindhi Rajputs fled to Kathiawar and their (to English eyes) most famous descendant was the late cricketer Ranjitsinhji.

The Rajputs were warriors, and their cities forts. This great gate of Bharatpur, with its towers and bridge, is reminiscent of Norman castles in our own country

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Pride of lineage and the tradition of the sword are proclaimed in the bearing of this Rajput nobleman and his servant

The first of the modern States of Rajputana that appears in history is that of Idar, whose Raja, Gohar, married the granddaughter of the Byzantine Emperor Maurice. It is amusing to reflect that the descendant of this match was the famous Sir Pertab Singh, who rode in Queen Victoria's funeral procession and in old age sailed for France to take part in the Great War. Sir Pertab's son once told me that on his return from college in England his father (a pillar of Hindu orthodoxy) only asked him three questions, "Did you smoke? Did you drink? Did you dance?" and on being reassured that his son had not succumbed to these snares asked no more questions about the seductive but infidel West.

It was a prince of the House of Idar who founded the dynasty of Udaipur. His name was Bapa and he checked the Arabs at the borders of Rajputana, inflicting on them a defeat which may be compared to that inflicted two years earlier by Charles Martel at Poitiers. And just as the Carolingian Empire dated from Poitiers, so the extraordinary renown of the House of Udaipur began from this victory. The Frankish kingdom became known as the eldest daughter of the Church, and the Rajputs under the leadership of Udaipur became the sword and buckler of militant Hinduism.

Though the Arabs never again invaded India, new waves of Mussulman invaders came from the north, from Turkestan and the Turanian uplands. The first Afghan dynasty contented itself with raids but the second, that of Ghor, came to rule. The clan of the Rathors, whose modern descendants are to be found in Jodhpur, were at that time noted for their luxury and wealth and their 'gay and joyous gardens'. Their Prince was one Jay Chandra whose daughter was the loveliest princess in India. She was carried off at the moment of her wedding to some uncongenial husband by her lover Prithvi, Raja of Delhi and of Ajmir. The Rathor prince called in the aid of the Afghans under Muhammad Ghori. The Afghans destroyed the armies of Prithvi and of his Rajput allies, and then turning on the Rathors drove them southward into the desert, a proper reward for their treachery. It is said that after the battle against the Rathors the corpse of Jay Chandra was only identified (so many were his wounds) by his set of false teeth held together with gold wire.

From this time onwards the Rajputs were confined to the country known today as Rajputana, a rough rectangle stretching on the south from the Sindh desert to Gujarat and on the north from the Jumna to the Sutlej. For the next five hundred years the history of Rajputana is a chronicle of reckless bravery, of apparently final defeats, of renewed resistance and of fearful massacre. The Mohammedan Emperors of Delhi could nearly always defeat the Rajput clans in battle but they could never tame their proud independence. The great fortress of Chitor was three times sacked, the Rajput warriors dying to a man, their women 'passing to heaven in a flame'. Jodhpur, Jaipur, Jaisalmer were taken again and again, but as soon as the Mohammedan armies returned to Delhi some new rebellion flickered into life. At last the great Emperor Akbar attempted to effect by conciliation the submission that war had failed to bring about. He made treaties with Jodhpur and Jaipur and married a princess from each of those States. Only Chitor held out against the Emperor's blandishments. After one of the most tremendous sieges in history Akbar finally destroyed and laid waste Chitor. Its prince Udai Singh fled away and founded the city of Udaipur that we now know; surely one of the loveliest towns in the world. But in spite of the fantastic pomp of the Udaipur court its rulers are still in mourning for the fate of their first capital, Chitor. Udai Singh as he fled before Akbar's armies swore that his family would never eat or drink from anything but leaves or sleep on anything but straw. And to this day it

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The granite and marble palace of Udaipur, topped with blue tiles and copper roofs, rising from the Pichola Lake. The immense central block is the zenana. Note the parsimony of the windows, and the 90-foot drop from them!

Udaipur palace dates from 1570, but so much has been added to it that it is a mixture of styles. This watergate is a late addition

Michael Huxley

Amber was mentioned by Ptolemy, and until the early 18th century was next only in magnificence to Gwalior. Then when artillery made its hill-top position difficult to hold it was deserted, and the court of Jaipur State moved to the new town of Jaipur, five miles away. This is the Diwani-kas (the audience hall)

is said that Ranas of Udaipur set their sumptuous beds on a mat of straw and eat from gold and silver plates laid on green leaves.

For a century Rajputana was at peace, and then the bigoted Aurangzeb attempted to restore the intolerance of former days. Once again the Rajputs rebelled and under Aurangzeb's grandson Udaipur, Jodhpur and Jaipur won independence. They were, however, unable to enjoy this long, for the new overlords of India were the Marathas, and bands of these predatory horsemen burst into Rajputana on wild forays. An attempt to conquer Rajputana was made by the Maratha prince Shindia, Maharaja of Gwalior, whose armies were commanded by a Frenchman, de Boigne. Born in Savoy, this adventurer had been an ensign in the Irish Brigade in Paris, a lover of the Empress Catherine the Great, a slave in Constantinople, a merchant, and a friend of Warren Hastings. He was now the commander of Shindia's forces which he had trained in French discipline, and the Maratha armies went to battle under the banners of Savoy. Against de Boigne's sepoys the Rajput charge broke in vain. Jaipur submitted and Jodhpur once again celebrated the rite of *johur*. The remaining Rajput princes appealed for help to the English. M. de Boigne quarrelled with his employer and left India for London where he lived in luxury. The Marathas were defeated by Wellesley and Rajputana saved for the moment from Maratha domination. Somewhat typically the Rajputs spent the next seven years in a desperate civil war. The princess of Udaipur, Krishna Kumari, had been betrothed

to Bhim Singh, Raja of Jodhpur, but the latter died before the marriage took place. Krishna Kumari was then betrothed to the Raja of Jaipur. This for some reason was considered an affront by the Jodhpur princes and civil war broke out. Both sides called in Marathas and Afghans to their aid, and for seven years Rajputana suffered every horror imaginable. At last, to bring her country peace, Krishna Kumari, the cause of the war, committed suicide. She was then about eighteen years old. She dressed herself as a royal bride, took a cup of poison and crying 'This is the bridegroom foredoomed for me' drained the cup and fell dead. For some time previously almost every state in Rajputana had been begging British protection to save the country from the increasing anarchy. This protection was granted, after the final capitulation of the Marathas to the East India Company, by the Treaty of Mandeshwar.

Most of Rajputana today is still a melancholy red-brown desert. The chief means of conveyance is a camel, and you travel for hours over rolling sand-dunes covered with a thin blue-grey shrub. The villages are often little collections of mud or thatch cones surrounded by a palisade. There is little agriculture and the people live by means of their numerous cattle which stray vaguely over the sandhills. There is little theft, for a thief's footprints can be tracked for miles in the sand. In Jodhpur and Jaisalmer each village has its own 'tracker' who is a footprint expert and can pick out the footprints of a thief that he has seen near the scene of offence from a hundred others. The evidence of these trackers is accepted even in British courts. The chief joy of the villagers is in old tales and ballads, which are sung on winter evenings round a fire before the village temple. In these ballads you catch a flavour of the childhood of our own race. There is an

Michael Huxley

Man Sagar (Man Lake) is near Amber, and the palaces in it were deserted about the same time. Man Singh (late 16th century) was Akbar's emissary to Kabul

atmosphere of the Viking sagas. Defeat not victory is the mark of the hero. Everywhere is fate, and the gods are caught in its toils as well as men. Love and romance are all the sweeter because they are overshadowed by inevitable catastrophe, and even at the end there is no rest but the eternal return. In the tradition-laden air of India the Rajputs have preserved an outlook of the heroic age of the folk-wanderings. Tall lean men with hooked noses and beards parted in the middle and brushed up towards the ears, they have many of the virtues of the early Germans. They tell the truth—I have recently tried for murder a Rajput who, in spite of persuasion and advice, insisted on admitting his crime, as he maintained that to tell lies about it would only increase his moral guilt. Their devotion to their horses is often legendary. At Umarkot they will show you a dent in the wall of the fort; a

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Perhaps he's a Thakur *with that carrot-sword—but to his mother he's the little god of love, Bala Krishna*

Michael Huxley

A royal procession forming up inside the Maharana's courtyard, with the dancing horse, which heads the procession, showing its steps

Sonaj Mall of Bhaunra at the ... Agra ... may be questioned whether this ... Hindu ... a fairly happy

The quiet zenana side of Suraj Mahl's palace also shows Mogul influence. The windows with their jowli-work lattices, and the curious roof are strangely out of keeping with the Rajput tradition of rugged, stern construction.

Rajput women tend to wear even brighter-coloured clothes than other Indian women. This is a street dancer—a little loud in her jewellery, perhaps—but it's her job

. John Wilson

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The miniature-painter sits under the city wall, and with a tatiana *grass bristle produces pictures of the heroic kings (like this one here) or religious pictures*

Rajput was to be hanged by the British in the fort; his horse broke loose from its stable and sprang frantically at the walls of the fort, trying to reach his master at the moment of his death. They make the most devoted friends. Their loyalty and devotion to their clan-leaders are very moving.

These are the people of the desert tracts. As you go towards Gujarat you come to more fertile country; sometimes from the window of a railway carriage you might imagine you were in Devonshire, so green are the fields, so high the thick hedges; and then suddenly a train of camels passes or you notice a company of wild peacocks sunning themselves beside a pool. Here, as you would expect, the people are different from those in the desert lands and are more closely allied to the Gujaratis, sharing with them a taste for trade. But of all the traders in Rajputana the most famous are the Mahajans or Marwaris of Jodhpur. It is curious that this should be so, for while to English people Jodhpur is probably famous for polo it is to Indians famous as the home of the Rathors and as the scene of tragedy and heroism. However, the Mahajans are almost certainly a far older community than the warlike clans and may be descended from the townsmen of the Sumerian-type civilizations of the Indus valley. The ruins of those towns reveal a peaceful urban culture unlike anything we know of later Aryan life in that part of India. The Marwaris have a financial organization which has spread all over India and they must be one of the wealthiest communities in the world. But for the most part they live in the greatest simplicity and the income-tax department has never really succeeded in assessing the resources of some of these firms, so varied are their connections and so secret their operations. The Marwaris have a bad name for their hard bargaining and their unscrupulous finance; and in their business operations they certainly deserve most of the opprobrium that is heaped on them. But to meet as friends they are generally charming. This is true of the heads of the firms, who mostly settle down in Jodhpur or Bikanir and leave the active conduct of their businesses in Bombay or Calcutta to their grandsons or nephews. When released from active participation in business they shed some of the asceticism of their youth and build themselves palaces in Jodhpur which must be seen to be believed. It is not the expense of these buildings that impresses the Western visitor so much as the execrable taste. In one drawing-room you will find several large models of the Taj Mahal, a jewelled bird-cage, a golden flower-vase filled with imitation roses made of pink coral. Like every Hindu, in old age their piety increases and they will make offerings to the temples in Jodhpur which are as extravagant and as tasteless as the furniture of their own houses. And yet for all their wealth they will not consider themselves the equal of some out-at-elbows *thakur* (Rajput noble) who has to step aside in the road to avoid the dust of the Marwari's Buick. The *thakur* is of the Kshatriya caste, while the Marwari is only of the trader caste. A caste system may produce inequality and injustice but it saves a civilization from some of the effects of plutocracy.

I do not know whether the younger generation of Marwaris in Bombay and Calcutta will return to Rajputana when they retire. Probably not; and this will be a pity, for as a community they will lose touch with an old and a real culture that is worth far more than the sham cosmopolitanism of the great ports. For English people too it will be a matter for regret. In Bombay and Calcutta anti-English feeling is strong; while Rajputana is one of the few places in India where one feels always among friends. After all we neither went to war with the Rajputs nor conquered them. It was at their own request that they came under British protection; and often an old Rajput noble will feel far more at home with an old-fashioned British colonel than with the young Lenin-worshipping students of the great cities.

Camels do most of the transport in Rajputana, for much of it is barren and waterless. These are two Jaipur merchants

The Bikanir Camel Corps, which saw service in China and Somaliland, comes from one of the most picturesque states in Rajputana

hn Wilson

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To most English people Rajputana is the Land of Princes; and it is true that owing to the accident of history and the extension of a protectorate over Rajputana as a whole this vast block of Indian territory remains entirely governed by hereditary princes, with the one exception of Ajmir which is under British administration. These Princes' States vary from large and prosperous countries like Jodhpur to comically Ruritanian principalities of which no one outside India has ever heard. At the present moment the ablest of the Rajput princes is the Maharaja of Bikanir, who, after General Smuts, is perhaps the shrewdest statesman in the Empire. He has an attractive wit. At some Imperial conference where, as is unfortunately the common practice with English people in dealing with Indian statesmen, he was being sentimentalized over but not listened to, he remarked: "I appear to be cast for the role of a ballet-girl in a chorus of prima donnas." Another extremely able ruler is the Maharaja of Alwar, now 'on leave' as a result of a rebellion in his State which had to be suppressed by British-Indian troops. The two occasions on which I have seen the Prince are typical of the contrasts to be found among Rajputs today. The first occasion was at a football match in London where he sat in a cloth cap and raincoat in drizzling rain. The other occasion was at some Hindu festival when, clothed in a gold shawl, he sat in a huge pair of scales, being weighed against gold which was afterwards thrown to his people. By way of contrast you have minor chieftains as odd and eccentric as 18th-century German princes. I once saw one of these wearing a turban which was covered with patterns of jewellery; inside the turban was some clockwork mechanism and the jewels spun slowly round and round.

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Towards an Arctic Air Route

by J. M. SCOTT

The passion for untrodden spaces has always drawn men to the Arctic, but the late H. G. Watkins and his companions had a more specific objective in their Greenland expeditions. Mr. Scott discusses the possibilities of an Arctic Air Route and the preparatory work that has been done in recent years by men of various nations

FOUR men, members of the British Arctic Air Route Expedition of 1930–31, were lying in a small tent precariously pitched on a Greenland glacier down which an ice-cap gale was blowing in gusts of something like 100 m.p.h. The tent had been designed for only two occupants, but a second couple had just crawled into it because the wind had picked up their own shelter and deposited it somewhere in the dark mass of rocks at the bottom of the glacier. Now they were very crowded; not entirely without advantage, for their combined weight on the inner flap might keep the tent in place. And so they lay, silent and fully clad, while the wind kept up a noisy argument with the frail canvas that stood in its way.

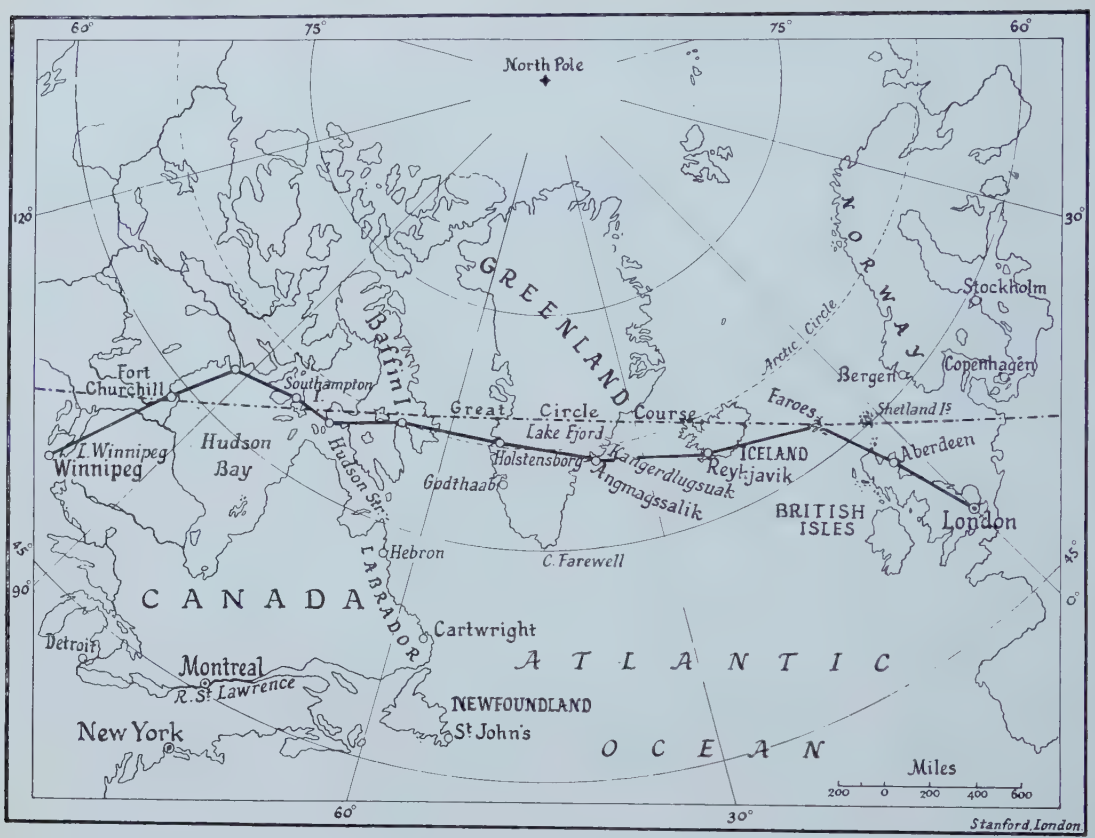
At last one man, tired of the storm's monopoly of self-expression, shouted against it in tones of utter scorn, "Air route! Air route my . . ."

Perhaps it was as well that the last word was lost and perhaps also he may be excused by the circumstances for his cynical outcry against the possibilities of the intercontinental air route he was engaged in studying. In calmer moments both he and his companions considered their survey and meteorological work as a good investment for the future; and in that belief they were justified.

Western Europe and North America are the most commercially active areas of the world, and the Atlantic is therefore crossed by more traffic than any other of the five oceans. This traffic consists of ships which competition and mechanical ingenuity have brought to a high pitch of regularity and speed. But aeroplanes travel much faster than ships, and speed is a prime factor in commerce. Therein lies the argument for a trans-Atlantic air route.

A number of bold aviators have flown the Atlantic, but apart from the advertisement of their engines and themselves their achievement could never have been commercially worth while; for they had to carry so much fuel that there was no room for mail, freight or passengers. If there were any floating aerodromes to break that 2600 miles' expanse of sea the case would be different; but that is a future possibility which cannot here be discussed. If the flyers made a detour southward they could use the Azores and Bermudas as refuelling stations, but the greater distance involved would largely counteract the benefit of speed. Yet all the time there is another route, one which migrating birds have used for thousands of years, but which man has been the last to appreciate.

The Faroe Islands, Iceland, Greenland and Baffin Island form a natural land bridge over the top of the world. This bridge lies on the great circle route—the shortest possible route over the surface of a sphere—between North-western Europe and the heart of Canada. What is still more important, it involves no sea crossing of more than 450 miles. The legs between the eight or nine possible refuelling stations would be comparable in length to those on many southern air routes, so that ordinary paying loads could be carried. An Arctic air route, therefore, is eminently desirable. If one continues in this academic strain, the next word is inevitably 'but'; in fact it would be difficult to save the rest of this article from becoming a



literary see-saw, causing dizziness in those who attempted to balance its endless pros and cons. It seems better to confine oneself as far as possible to facts, to tell what has been done, and allow the reader to draw his own conclusions.

But before describing particular activities we must clearly understand what the explorers wanted to discover. First they needed an abundance of meteorological data, to allow forecasts to be made and to convince prospective promoters that the route could be flown during all or part of the year in about half the time taken by the fastest ships and with as much regularity. Then they had to prepare accurate large-scale maps of the less-known parts of the route—Greenland and Baffin Island. Lastly they had to keep their eyes open for possible landing grounds. There would have to be two or three alternative—water and terra firma—aerodromes at some of the stopping places, chiefly because an aeroplane which starts on skis or floats or wheels must, unless it carries extra weight in the form of an amphibian undercarriage, land on the same medium that it took off from; and also, since the great circle route trends north and then south, it passes, as it were, through different seasons. In other words, there is bay ice round Greenland when it has all melted from Lake Winnipeg.

And now at last for facts. Canada was the first country to take an active interest in the route. In 1922 the Canadian Arctic Service sent an experienced flying officer to their most northern districts to study the conditions and decide upon the most suitable type of aeroplane. In 1927 three air bases were established in Hudson Strait and from these, speaking generally, flying was carried on during all

seasons of the year. This achievement was not unique, for similar reports were received from other parts of Arctic Canada. To quote from an official handbook of the North-West Territories: "Western Canada Airways Limited has done a great amount of commercial flying in the north, particularly in Mackenzie District, and Commercial Airways Limited secured a contract for the carrying of mails as far north as the Mackenzie Delta during the winter of 1929–30."

To summarize the experience of these flyers. Conditions are generally good both in summer and winter. The climate is a steady continental one and extreme cold is in itself no obstacle, for it is not difficult to keep an engine warm. The only dangerous temperature is that of freezing point or near it, for the moisture in the air is then inclined to condense and freeze upon wings and propeller, increasing the load of the plane until finally it is forced down. These critical temperatures were most often experienced by the men at Hudson Strait, but such conditions have often been met further south and over the Atlantic and so cannot be considered as peculiar to the Arctic. The only periods when flying is definitely impossible except from land aerodromes is during the transitional periods of freeze and thaw.

Since the Canadians had already done so much, it was natural that they should be ready to co-operate with Gino Watkins when he proposed to examine another portion of the route. Most of the Canadian Arctic districts were already well surveyed, so Colonel Ralston, then Minister of National Defence, arranged that the personnel of the Royal Canadian Mounted Police stationed at different posts in the Arctic islands should be sent for a short meteorological course at Toronto Observatory. Since then each post has been equipped with instruments, and the ever-increasing data so obtained will some day be of enormous value.

Gino Watkins's plan was to make a general survey of the least-known part of the

Royal Danish Legation

Faroese Women in National Costume

route. Canada was looking after her own sector, which extended from Winnipeg to Baffin Island. Reykjavik in Iceland and Thorshavn in the Faroe Islands were civilized capitals. Even the west coast of Greenland had been quite accurately surveyed and was populated by settlements with Danish Governors every fifty miles or so. Therefore Watkins decided to go to the east coast of Greenland, whose 2000 miles' extent has only two settlements. He hoped to map about 500 or 600 miles of the coast by ground work supplemented by aerial photographs, to make a record of weather conditions throughout a year both on the coast and on the highest part of the ice cap, and further to examine the ice cap by making a number of long sledging journeys over its surface.

The B.A.A.R.E. sailed from London on board Shackleton's old *Quest* in July 1930. One member of the party, who happens to be the writer of this article, had been sent on ahead to buy fifty husky dogs, for although the expedition possessed two Moth aeroplanes and an outboard motor boat, sledge dogs would be the staple method of transport. A brief description of the experience of these fourteen men during the year that followed may give the reader a better idea of the general conditions existing on this least-known part of the air route than can be gained by more direct description.

East Greenland is protected by a strip of drift ice anything up to 100 miles wide which is continually drifting southward with the polar current. The *Quest* was lucky enough to pass through this natural barrier without much difficulty and reached the little settlement of Angmagssalik, which is inhabited by a Danish governor and wireless operator and a few score of Eskimos. In a fjord 30 miles from Angmags-

H. G. Watkins and the author with a good team of Huskies B.A.A.R.E.

B.A.A.R.E.

Angmagssalik Settlement and Fjord

salik Watkins decided to build his base; and, that being done, the survey journeys immediately began. One man was left at the hut to take weather observations while the other thirteen dispersed, some inland to establish the ice-cap weather station and the rest to travel northwards in the *Quest* as far as Kangerdlugsuak Fjord. The *Quest* party occupied themselves in making a plane table survey of the coast and in taking aerial photographs from 10,000 feet.

In this latter work Watkins and Flight-Lieutenant D'Aeth had an early experience which taught them the danger of using the open sea as an aerodrome. The Moth was put over the side and took off from a patch of open water. She made a short survey flight and returned to find that there was no longer any open water, for the drift ice had covered it. D'Aeth was both skilful and fortunate to come down without damage to his floats. After that he used as a flying base a fresh-water lake at the head of a fjord 120 miles north of Angmagssalik. They called it Lake Fjord, and at once realized its importance, for it lay on the route between Iceland and Holstensborg in West Greenland. It was to Lake Fjord that Watkins returned on his last expedition in 1932.

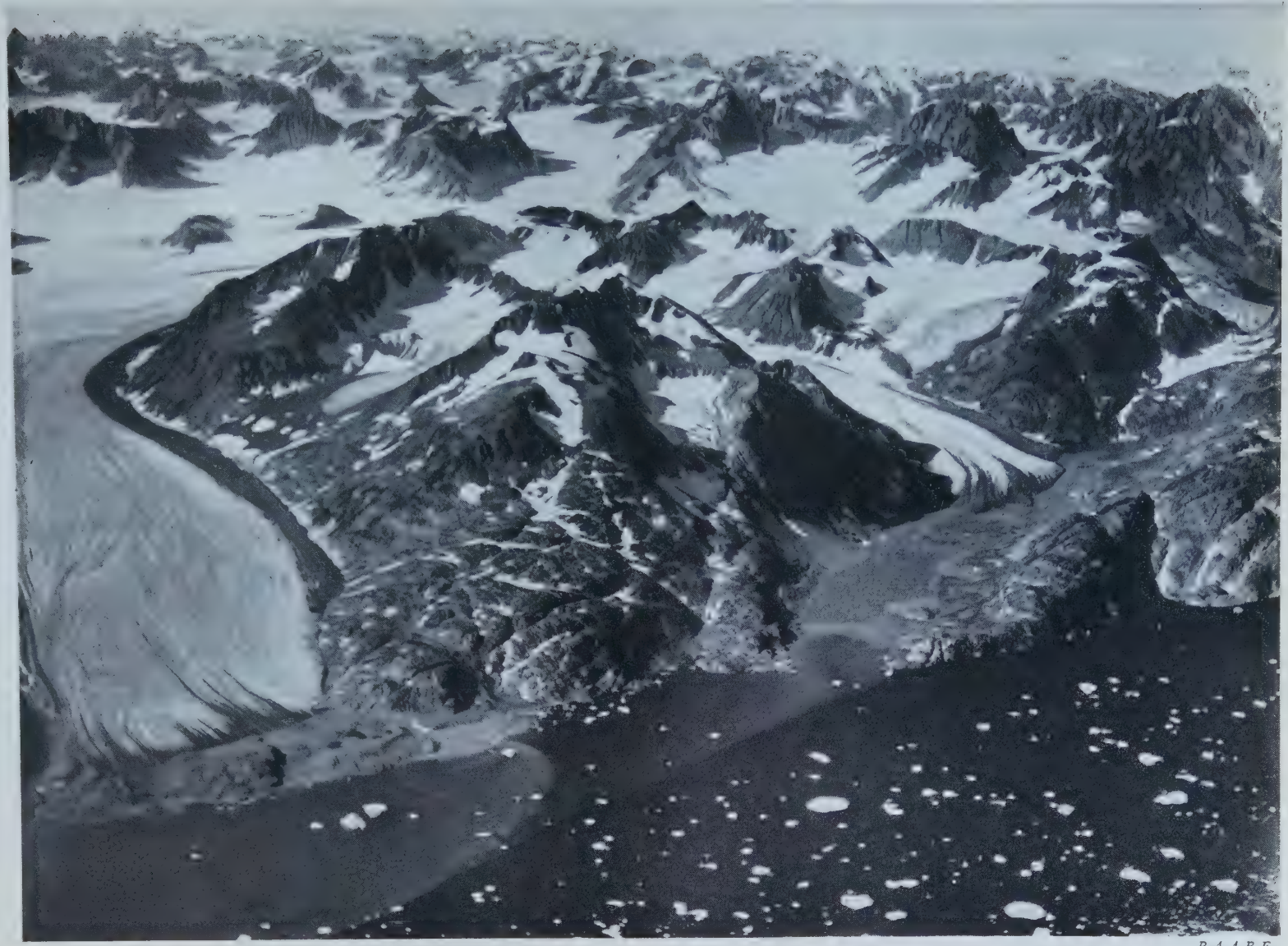
Meanwhile the first sledge party had established the central weather station, where continuous observations were to be maintained until Augustine Courtauld was blockaded in the tent by drifting snow in April of the next year. But before the winter started Watkins and I made a sledge journey down the crest of the ice cap, here 8000 to 9000 feet above sea level, to discover if there were any transverse valley which would make an easier flying path from coast to coast. The journey was

B.A.A.R.E.

Return from hunting. The Eskimo canoe or 'kayak' is extremely shallow and very easily upset, but once mastered is the most efficient vessel in which to hunt seals among the drifting ice-floes. The hunter conceals himself behind the white cotton screen in order to approach the seal without attracting attention

B.A.A.R.E.

An Eskimo lady from Greenland. Her peculiar headdress reveals that she is married, and her smile that she is a typical member of "the most cheerful people in the world"



B.A.A.R.E.

Greenland's Icy Mountains from the air. The East Coast Range and some of its glaciers

cut short by violent winter storms which appeared very suddenly and blew so fiercely that it was difficult to stand upright in them. We judged, however, from the drift and the movements of the clouds that these storms were probably shallow and that it would be quite possible for an aeroplane to fly over them.

We returned safely to the base, but the storms followed us. Throughout the winter they continued to blow, often for days at a time. The wind slipped down from the ice cap to the sea with ever-increasing speed, and by the time it reached the base it was capable of blowing down the wireless masts, rattling the hut and sending empty boxes and Lindsay's bath trundling over the rocks to vanish in the open sea beyond. But again the storms seemed shallow and, which was still more important, they were undoubtedly very local. While we were being blown almost to pieces there was no wind at all in a fjord 30 miles away. Another argument for alternative aerodromes.

One night the first aeroplane, now on skis instead of floats, was caught by a storm while tethered—it had seemed securely—on the fjord. There was not much left of it in the morning. But Hampton, Rymill and the Eskimos got to work at once. The men carved a new rudder out of driftwood, the women covered it and the wings with the cloth they made their clothes of; and the aeroplane flew again. The Eskimos were a great help throughout. They thought us and our 'big birds' almost too good to be true, and while working for us for love they were always either laughing or expressing wonder.

B.A.A.R.E.

On the Ice Cap. 'Dog-tired' after a hard day's sledging

B.A.A.R.E.

The B.A.A.R.E. Aeroplane on skis at Angmagssalik in winter

The expedition concluded with a journey northward on the ice cap and two across it to the other coast; also an open boat trip round Cape Farewell. The whole party returned to England in excellent condition and with the belief that a regular air route across Greenland would be quite possible during the summer months, and in the winter too if there were alternative landing grounds in case of local storms and wireless directional equipment in case of bad visibility. The great circle route would only just cross the Arctic circle, so aeroplanes following it would scarcely suffer from the winter twilight; and snow is a good reflector of what light there is.

While we were in Greenland Dr. Wagener's expedition was working about 500 miles further north. They took a very complete series of weather observations but their district was beyond the line of the probable air route. Watkins's next and last expedition of 1932–33 concludes the story of protracted exploration, though daily weather observations are still regularly made by the Danes at all their principal Greenland settlements. They are also, of course, made in Iceland, the Faroe Islands and, as has been stated, in the appropriate Canadian stations; so knowledge of the route is steadily increasing.

But besides the work that has been described one must mention the flights which have been made along the route. Perhaps they only demonstrated what was already obvious to the initiated—that under favourable conditions an aeroplane could follow the northern route. But the press publicity that was given to them served to introduce the Arctic Air Route to the man in the street—and it is he who is going to pay for its formation. This publicity has not always been useful. The 'Flying Family' came to grief on the Greenland coast in

1932, but that flight was quite unauthorized and its mixed personnel was scarcely suitable for long-distance flying in any part of the world. Luckily this unfavourable instance is outbalanced by the number of well-planned flights which have been made. In the summers of both 1930 and 1932 Captain Wolfgang von Grünau flew from Europe to Canada. He followed the Arctic route except that he flew south-westward over the southern tip of Greenland and headed thence directly for the Labrador coast. His first flight—from Schleswig-Holstein to Montreal—occupied 47 flying hours comfortably spaced out over a total period of about a week. The second flight was accomplished in four days. The machine he used was a Dornier Wal with a crew of three or four.

At the end of July 1931 Parker Cramer and one companion started from Detroit on an east-to-west flight organized by Pan-American Airways. They reached Greenland safely and flew from Angmagssalik to Reykjavik. South of Iceland his seaplane was forced down for some hours but he managed to reach the Faroe Islands, where he spent the night. Next day he set off for Copenhagen but bad weather compelled him to land at Lerwick in the Shetland Islands. Next morning he continued his flight in weather that was far from favourable. About midday a wireless message was picked up in which Cramer said that he believed he was over Southern Norway and expected to reach Copenhagen at 4.30. That was the last news of him. Some days later a trawler found the wreck of his machine floating in the sea about 50 miles from Berwick-on-Tweed.

It was during the next summer, 1932, that Colonel Lindbergh made his remarkable flight to all the countries that border the Atlantic. With his wife he flew north from St. John's, Newfoundland, and down the Labrador coast to Hebron. Thence he crossed to Godthaab in West Greenland. Before he took off from Angmagssalik for Reykjavik he had twice crossed the ice cap and flown round the whole extent of coastline that matters to the air route. His report—such of it as was published—was cautious: he would make no definite prophecy, for his examination had been made only in the summer. But Pan-American Airways, for which he, like Parker Cramer, was working, have now obtained a concession for air-mail rights in Greenland and Iceland.

General Balbo's Air Armada made their flight during the same summer. But they did not visit Greenland. From Reykjavik they flew direct to Cartwright in Southern Labrador, encountering, as was only to be expected off that treacherous coast, where a polar current meets a warmer sea, a great deal of fog. They returned to Europe via the Azores.

One must not close this record without mentioning the great amount of survey flying which the Danes have done in Greenland, and the fact that last summer Mr. Grierson succeeded in flying over the route from England to the United States in a small aeroplane.

Altogether there has been quite a lot of summer flying over the route, and most of it has been successful. Apart from that done in Canada and by the B.A.A.R.E. in Greenland there have been no winter flights. Briefly, the advantages of the route are its shorter length compared with one over the Atlantic proper, and the large number of refuelling stations that it would provide. Its disadvantages are: first, the shortness of the winter days and the prevalence of fog in spring, both of which dangers could be enormously reduced by the use of directional wireless; second, the local Greenland storms, which would not be serious if ample weather reports and alternative landing grounds were available; and last the public's distrust of the Frozen North, a fear which can only be overcome by time and demonstration.

Admittedly the establishment of a safe route would be expensive. The wireless stations and alternative landing grounds of

which we have spoken would cost a lot of money to make and be difficult to stock and maintain. But reasons have always been and perhaps always will be found for spending money in order to save a few days of travelling time.

B.A.A.R.E.

Here at any rate are two people who disapprove of the whole project

Tracks across the Wilderness

The North Syrian Desert Highway

by CHRISTINA PHELPS GRANT

From time out of mind the North Syrian Desert has formed one of the most important bridges between Europe and Asia. A pageant of history has traversed the waste—the armies of Sennacherib, Roman Legionaries, Saracens, Turks, down to British officials and the Nairn Transport Cars of today. The tribes of the desert have watched them all. Mrs. Grant, who lived for three years in the neighbourhood of the Highway, describes it in this and a subsequent article

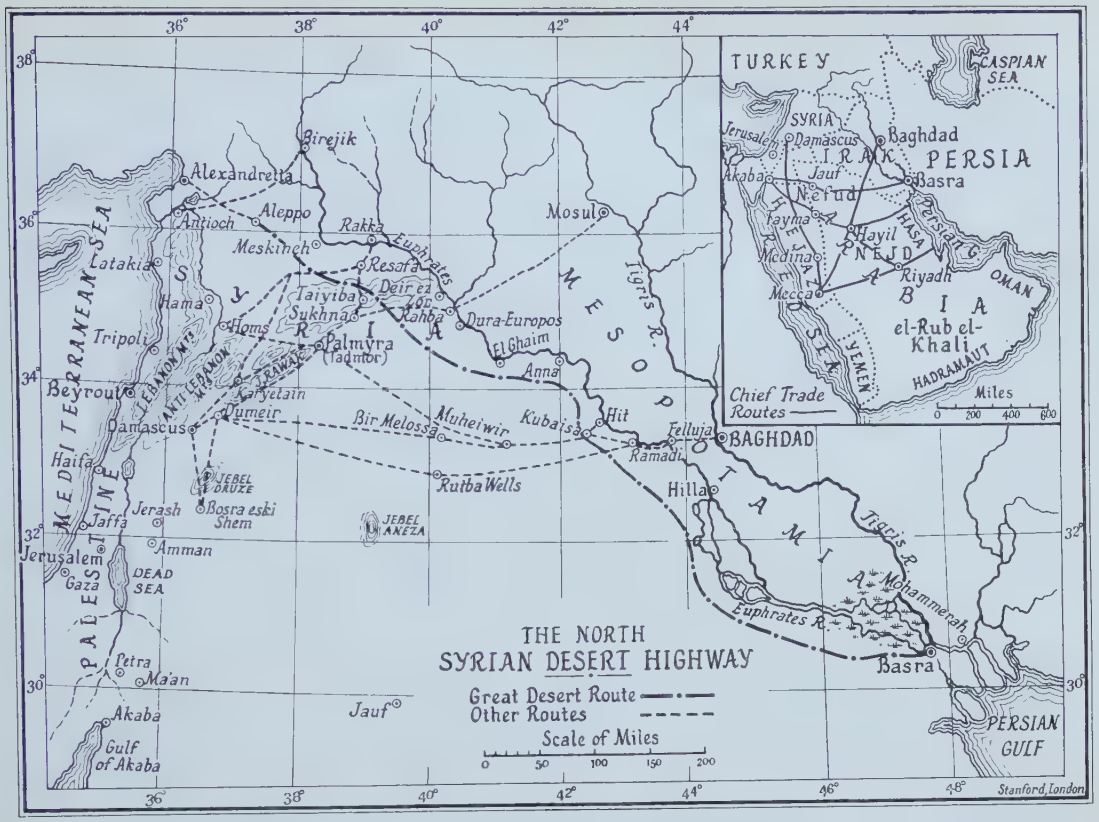
CERTAIN deserts divide countries and their civilizations inexorably; others unite them. The Syrian Desert is one of those which unite adjacent lands. It is, geographically speaking, the shortest highway between the Orient and the Occident. For more than three thousand years the trade routes of this desert have linked the eastern seaboard of the Mediterranean with Mesopotamia and the Persian Gulf, fostering cultural and religious as well as commercial exchanges between the Near and the Middle East, and enabling Syria, Palestine and Mesopotamia to become intellectual and commercial middlemen between the two extremes of east and west.

In order to understand the peculiar significance of the North Syrian Desert routes, and the reason why they have always made so convenient a short-cut to the east, one must consider the geological nature of the desert, its divisions and limitations as well as its points of advantage. To do this, one is also forced to take into account Arabia, which intervenes between Africa and Asia. The southern fringes of this great peninsula, famed as the 'incense lands', are Oman, Hadramaut and Yemen. The interior of the peninsula, which stretches across more than ten degrees of latitude, is divided into three parts: a southern desert of reddish sand, the impassable 'Empty Quarter', *El Rub'el-Khali*; a relatively fertile central plateau, the great highland of Nejd; and a northern area which contains a vast sand desert called the Nefud, an Arabic word denoting the high crested sand-dunes, often 150 feet or more in height, of which it is composed. Beyond the Nefud begins the Syrian Desert, the southern limits of which coincide roughly with the thirtieth degree of latitude.

The Syrian Desert may be thought of as a triangle whose base rests on this same thirtieth degree, and whose apex projects itself north-eastward towards Asia Minor —to where the fertile lands of Syria and Mesopotamia converge. Bounded on the west by Trans-Jordania and the Anti-Lebanon Mountains of Syria, on the east by the River Euphrates, the northern part of the Syrian Desert reaches up to Aleppo and to the westernmost bend of the Euphrates at Meskineh—close to 'the ford called Thapsacus'.

It is both permissible and logical to think of the Syrian Desert, a plateau some 2000 feet in elevation, as a geographical unit which resolves itself into two principal component parts. The southern half of this desert, quadrilateral in shape, has certain definite characteristics; the northern half, triangular in shape, has equally definite but totally different characteristics. It is the southern half of the desert which divides, and the northern half which connects the fertile lands of the Mediterranean seaboard with the equally fertile valley of Mesopotamia.

The whole of the southern desert region has been known since the middle of the 18th century as the Great Desert (the early Arab geographers called it *as-Samawa*). It extends roughly from the thirtieth to the thirty-third degree of latitude, and from



the Jordan-Dead Sea Valley eastwards to the Euphrates. There are two principal characteristics of this southern half of the Syrian Desert. It is practically waterless, except when the winter rains leave water-holes and temporary pools; and it is stony mountainous desert, strewn with patches of lava country and great basaltic boulders on the west and deeply indented by *wadis* (or dry water-courses) on the east. For these reasons it is entirely unsuitable for commercial caravans. Individuals and small caravans have travelled in the Southern or Great Desert; some have even dared to cross it; but it has never been used for commercial purposes. In other words, the Great Desert is crossed by no trade routes, with the irrelevant exception of a modern air route. Only on its southern border are there highways, from southern Trans-Jordania and Petra to southern Mesopotamia and the Persian Gulf, which intersect at Jauf. But even these routes have never been used by the greater trade caravans, because they are long and dangerous, and in some districts water is very scarce.

The northern half of the Syrian Desert (also called the Little Desert), a triangle set within the larger triangle of the whole, is a different sort of country altogether. For the most part it resembles a vast undulating plain, gravel-strewn in some places, sand-covered in others. Dotted with dry hard-caked mud-flats and crystallized salt marshes (the *Sabkha*), it has often been likened to arid steppe land. Its colouring, which is a blend of grey, brown and yellow, takes various tints of red and violet in the changing lights of morning and evening. In many places the surface is hard and relatively smooth, so that it is adapted to the use of any sort of caravan travel—camels and motor cars alike. Water is, comparatively speaking, plentiful: it is near the surface in every *wadi* or depression, and wells and springs are frequently to be met

with. All the low-lying parts of this plain are sparsely covered with little grey-green aromatic plants and with camel thorn. After the spring rains, its surface is thinly covered by a kind of high feathery grass. Herds of gazelle are hunted there, hares, wolves, bustards, and a kind of small partridge. It is small wonder that many tribes migrate northwards every summer in order to pasture their flocks and their camels in this comparatively fertile and well-watered region, or that the black tents of certain nomad tribes are to be seen there the whole year round.

The nomad inhabitants of the desert are called Beduin, from the word *Badia* which is their name for all the untilled, empty regions where no permanent habitations exist—for, in short, both the southern and northern, the Great and the Little, Deserts combined. From time immemorial successive tribes have emigrated from Arabia, gradually displacing or pushing northwards whatever tribes had previously been in occupation of the *Badia*. Thus, for example, came certain tribes of the Shammar Arabs in the middle of the 17th century; and thus, a century later, were the conquerors pushed in their turn very gradually across the Euphrates into Mesopotamia by other Nejdi Arabs, the Aneza. To this day the many-branched Aneza is the most powerful of all tribes of the Syrian Desert; and, of its branches, the Rualla are the wealthiest and the most numerous. Each Beduin tribe, with its sub-tribes, resembles a Scottish clan. The group council of its sheikhs in assembly, of whom the principal sheikh is but *primus inter pares*, decides all important matters, whether of war and peace, of justice, raids (*ghrazzu*) or blood-feuds. The *dira* of each tribe is the orbit of its migrations, the territory in which that tribe alone has the right of grazing and watering and otherwise searching for a livelihood. They are a hardy people, these Arab nomads, whose trade is hunting and fighting as well as the breeding of camels and horses. Since the time of the first Caliphs of Islam, Beduin sheikhs have hunted bustards, hares and gazelles with falcons and with greyhounds. Frequently also, they are raiders, stealing camels and horses from other and hostile tribesmen, or plundering travellers and merchant-caravans. Faced with the arduous conditions of life in the desert, only the very fit are able to survive at all. As Mohammedans they are trained to endure want and privation; religion and environment equally force them to live abstemiously. Doubtless the Prophet considered the physical as well as the spiritual needs of his people, when he laid down his rules. It is true that the modern Beduin are neither deeply nor fanatically religious, excepting always the Wahabis, but the force of religious custom is strong among them. Custom and tradition are, in fact, the nomads' only law. The extent of their habitual abstemiousness can be gauged when one remembers that dates and camel's milk are the staples of their diet, that coffee is their only customary luxury, and that tobacco is their only self-indulgence, and that a rare one.

The Beduin press upon one another, as they do upon the semi-fertile frontiers of the States which surround the *Badia*. This pressure is more acute in years of drought, but at all times, in every year, the tribesmen are impoverished, restless, and in a state of chronic flux and instability. They are a fiercely independent people, and jealous of their rights in the *Badia* which they occupy. After all, it is their desert—or so they have always thought. It is this belief that has led them to resist the encroachments of all outsiders and refuse to pay taxes to the Ottoman or any other Government, and that has encouraged them to levy tolls at the point of the sword upon all caravans, commercial or otherwise, which have crossed their 'open lands'.

It has already been said that the Great Desert has never been practicable for caravans. The trade routes of Central Arabia were so remote and the lands they traversed so inhospitable, that they were never ex-

Carl Raswan

Amir Fuaz ibn Sha'lan, the young chief of the Rualla Beduin, falcon on wrist and mounted on his war-mare

ploited for transit traffic except by the local inhabitants. The North Syrian or Little Desert, on the contrary, lends itself readily to easy caravan travel and consequently, for three thousand years and more, it has been liberally transected by trade routes which have been almost uninterruptedly used by commercial caravans. There are only two serious obstacles to transport in this steppe land. For one thing, numerous *wadis*, two or three of which are difficult to cross, slope down on its eastern edge to the Euphrates. For another, there is a range of desert hills that crosses the plain diagonally, from the neighbourhood of Damascus to the Euphrates, just north of Deir ez-Zor. Between Palmyra and the river, this hilly divide is rather broad, rocky, and irregularly spread out, but from Palmyra to Dumeir (near Damascus) the highland narrows into a single range of mountains. There are, however, passes leading from the north-western to the south-eastern parts of this great plain, and these have naturally predetermined the course of the various trade routes. The situation of Palmyra on the eastern slopes of the range, commanding the most strategically important of these passes, accounts for the commercial supremacy of this famous caravan city during so many centuries of its history. For this reason certain explorers—notably Dussaud, Poidebard and Musil—have named the entire northern or Little Desert Palmyrena. The region has an essential and effective unity which is rendered the more striking by the fact that the whole of its territory was once within the frontiers of the Roman Empire.

The flow of trade across this region has been derived from various sources. In ancient and medieval times all trade from southern Arabia followed the north-eastern and the north-western coastal plains of Arabia and so found outlets on the one hand through Mesopotamia and on the other through Syria. Part of the commerce of Palmyrena arose from a desire to exchange the products thus brought to these two countries. Palmyrene trade with

Carl Raswan

The Arab's love of his horse is proverbial and he relies on its speed in raiding neighbouring tribes. Camels are ridden during the greater part of the journey, horses being mounted only for the final dash

Carl Raswan

Some of the camels of the Rualla assembled at a watering-place, with the low black tents of the tribesmen in the background

Iran, or Persia, was also of intermittent importance. Another and a major part of this commerce was the Oriental trade, which was carried to the Occident over this highway. Spices and condiments, muslins and silks, gold, silver and precious stones, incense, perfumes and aromatics were brought across Palmyrena for the west.

The commercial possibilities of the Little Desert were first appreciated in the 8th century B.C., when the Arabian camel was introduced into the North Syrian Desert for purposes of transport. At first the Bactrian or two-humped animal was tried, but it was soon replaced by the single-humped camel of Arabia, which was better suited to a hot dry climate. For it must be remembered that, although it can be bitterly cold and wet in the Syrian Desert in winter time, the rainless days between April and November are for the most part unbearably hot. Before the 9th century, Syro-Mesopotamian commerce had been carried on by asses across the mountains of northern Mesopotamia—a very long, roundabout journey, through difficult and dangerous country. Once camels were used on the desert, caravan tracks were made across Palmyrena, and trans-desert routes gradually multiplied in number.

Palmyra, whose early Arabic name was Tadmor, meaning city of palms, became the first desert *entrepôt*. Through this oasis city Phoenician caravans carried their goods across to Babylonia, and later, after a hiatus during the early Persian period (the Persians preferred the more northerly routes), Palmyrene commerce was revived in the later Seleucid or Hellenistic period and reached its zenith between the 1st

A. Poidebard

An air view of Palmyra looking towards the Valley of the Tombs. This pass, between the Jebel Rawak on the left and the Jebel Abyad on the right, leads to Damascus. In the foreground is the great Temple of Bel and beyond it the ruins of the colonnaded main street

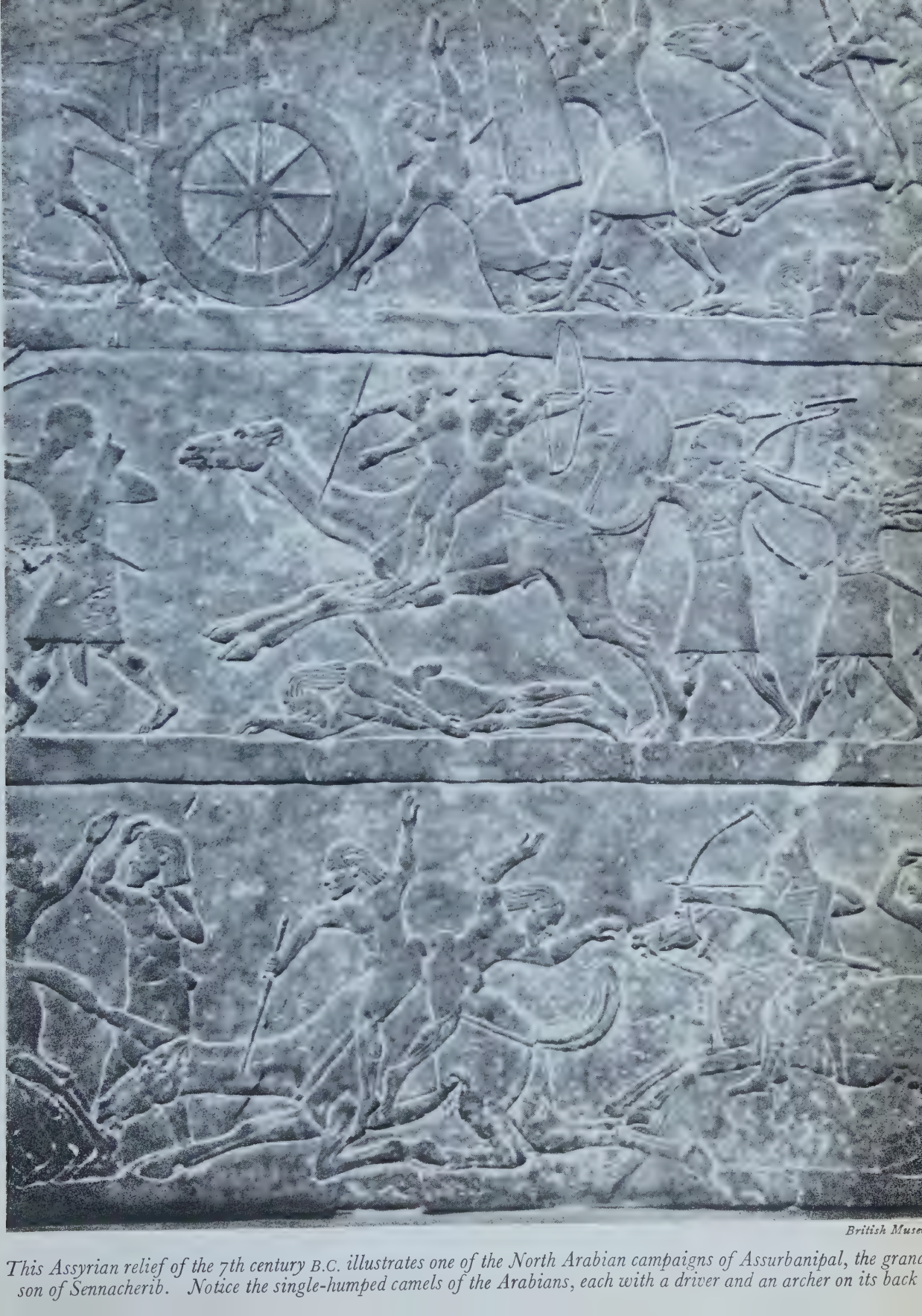
A. Poidebard

Dura-Europos was founded by Alexander's Macedonians, was under Parthian rule for nearly 300 years and then became the first Roman establishment on the Euphrates. This air view shows the vast polygonal enclosure surrounded by fortifications. Along the river-bank is the citadel and opposite, on the extreme left, is the main gate

and 3rd centuries A.D. It is only since 1918 that archaeologists have discovered how great was the Palmyrene Empire and to what a high degree of civilization Palmyra herself attained. A typical caravan city, as were her earlier rivals Petra and the frontier caravan cities of Trans-Jordania, such as Jerash and Bosra eski-Shem, Palmyra was unique in the quality of her urban culture. Like them she had arisen and continued to exist in order to meet the needs of desert-borne trade, and like them she grew strong and immensely wealthy as a result of that trade. A long colonnaded caravan road (originally there were 375 columns), frescoed walls and the foundations of palatial residences, temples to her gods, statues to her merchant oligarchs, memorial tablets to caravan leaders and special altars for the worship of the gods of caravaners—all these have told their tale. But in addition, they testify in Palmyra to a blending of the culture of east and west. Babylonian, Assyrian and Iranian elements were mixed with the indigenous Syrian, and upon this mixture was superimposed a veneer of Graeco-Roman civilization. The famous stone tablet upon which were inscribed the fiscal laws of the city also throws light on the regulation of Palmyrene taxes and customs. As the middleman of all Syro-Mesopotamian trade Palmyra had no serious commercial rival and, as a frontier State whose neutrality and independence were guaranteed by both Rome and Parthia, her political power grew hand in hand with her prosperity. Over Palmyrena, because this district was the north-eastern part of Roman Syria, a network of routes was developed. They were all patrolled, at first by Palmyrene forces and later by Roman legionaries, and provided with wells and fortified posts spaced at regular intervals, 30 miles apart. The principal road of the Roman period connected Palmyra with Hit, and from it a track branched from this route directly to the Euphrates, to the ancient Parthian fortress-town called Dura-Europos, which had become one of the most important commercial centres on the river.

Unfortunately we may not here digress to follow the individual fortunes of Palmyra; to learn how she tempted destruction at the hands of Aurelian; how her walls were levelled by legionaries, and her Queen Zenobia was taken to Rome in chains; nor yet how Palmyrene traffic inevitably declined in times of war and anarchy, and as inevitably revived in eras of peace and prosperity. There is space only to note that the later Byzantine Emperors restored the fortunes of Palmyra, and that thereafter the Little Desert was commercially important during the greater part of the Saracen period from the 7th to the 15th century, both under the Caliphs of Damascus and Baghdad and later under the Mamluk Sultans of Cairo; though between these two régimes traffic was seriously interrupted owing to the sack of Baghdad by the Tatars in 1258 and their destruction of the Mesopotamian irrigation system. During the Saracen period there were two principal trans-desert routes: the high-road from Damascus to Rahba on the Euphrates (the modern Mayyadin), which went via Karyetain, Tadmor (Palmyra) and Sukhna, and the ancient Roman road (originally known as the *Strata Diocletiana*) which connected Damascus and Palmyra with northern Mesopotamia, by way of Resafa and Rakka.

A subsequent article will deal with the vicissitudes of trade and travel in the Syrian Desert under the Ottoman Turks and with the various types of travellers who have made use of its highways. Syrian and Mesopotamian merchants; European commercial travellers and dispatch-bearers; English civil servants, on their way to and from India; express messengers of the Ottoman Empire, and the Arab couriers of the English dromedary post; explorers, scientists and archaeologists of the 19th and 20th centuries, and the intrepid organizers of motor transport: all these have had their share in the perennial pageant of desert travel.



British Muse

This Assyrian relief of the 7th century B.C. illustrates one of the North Arabian campaigns of Assurbanipal, the grand son of Sennacherib. Notice the single-humped camels of the Arabians, each with a driver and an archer on its back

India's North-East Frontier

by CAPTAIN F. KINGDON WARD

Everyone knows of India's North-West Frontier, where British posts line the Khyber and face the stony hills of the Pathans. Few have ever heard of her North-East Frontier, guarded by almost impenetrable forests. Captain Kingdon Ward has added greatly to the beauty of English gardens during his twenty-five years of exploring and plant-hunting along this rain-soaked borderland

The North-West Frontier of India is 'in the news' several times a year and not infrequently on the front page. Half the army of India is concentrated within easy reach of the Khyber Pass, ever on the watch, for the North-West Frontier is the land gateway into India and it stands always ajar. In the cities of the Punjab you will meet Afridis, Persians, Afghans, Baluchis, Turkis, Tartars, all the races and tribes of the Middle East and of Central Asia, mingling with the peoples of Hindustan.

Now turn to the other end of the Himalaya, 1600 miles away. Have you ever heard of India's North-East Frontier? Probably not; for it very rarely gets into the newspapers. That is because it has no 'news value'. Nothing 'highly significant' or potentially dangerous (except an occasional earthquake) ever happens there. Even the fact that this is in itself astonishing is hardly realized, though when we remember that on the North-East Frontier the Indian and Chinese empires are in contact, we may well be surprised. Here are the two greatest reservoirs of humanity in the world, the one containing 350 million, the other 400 million inhabitants, and the two together more than three-fifths of the entire population of the globe! And yet they have had no more effect upon one another than have, say, France and Bulgaria. Why is this? It seems incredible, but it is true. The answer can be given in one word: forest. India does not keep an army watching the North-East Frontier as she does the North-West. But then history shows she has been invaded from the North-West time and again; and every invasion was successful until the British occupation. India has never been invaded from the North-East and probably never will be. You do not find strangers from beyond the mountains in the Assam valley, as you do in the Punjab. What is the reason of this startling contrast? It cannot be the mountains, for both frontiers are protected by ranges of mountains. The Karakorum Pass which leads from Central Asia into the Indus valley is over 18,000 feet high, higher than any of the passes on the North-East Frontier. I repeat, the reason is forest. It is the belt of dense forest on the North-East Frontier which bars this entrance into India and keeps it closed; forest more forbidding, more sinister than anything one can picture after seeing the kindly forests of Europe. People speak glibly of impenetrable jungle; these jungles or rain forests which cover the *terai* and foothills of the North-East Frontier are really impenetrable. Now forest implies abundant rainfall, and evergreen rain forest implies rain all the year round, with no serious stoppage of growth due either to excessive drought in the hot weather or to cold in winter. Nevertheless, rain in the foothills in winter means snow on the heights. Thus there is a double reason why the North-East Frontier is impregnable; the mountain passes are snowbound all the winter, while the forest belt is rain-drenched and impassable all the summer. Let us take a look at this mountain and forest barrier which for thousands of years has held off the Mongol peoples, remembering that the tendency has always been for the people of Asia to move southwards towards the coastal lands.

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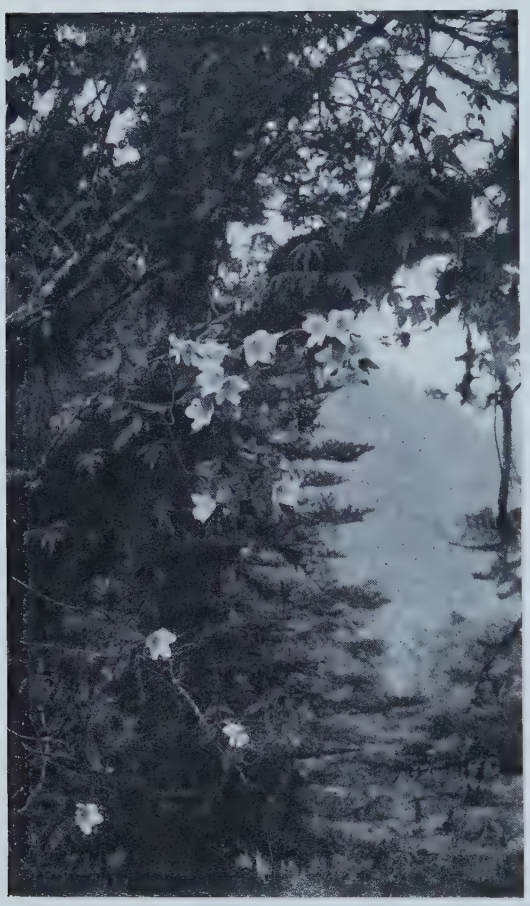
Sub-tropical hill jungle at 2000-3000 feet. Porters may be discerned crossing the stream

Starting from Nepal, the southern edge of the rain forest follows the foothills along the base of the Himalaya, turning north-eastwards at the Assam re-entrant, and curving in a hairpin bend south-westwards and finally southwards down the Burma coast. Thus the whole north-east frontier of peninsular India, which otherwise would have been exposed to a flank movement by the Mongolian peoples, is protected. The forest has never been cut down because the mountains are too steep to admit of extensive cultivation; the forest belt is, in fact, virtually uninhabited, except by primitive tribes who form a further defensive barrier between the peoples of the plains and the peoples of the plateaux. These tribes are non-partisan, and welcome strangers from neither side. They are often at enmity with each other but, though warlike, they have neither the organization nor the armament of the North-West Frontier tribes. Thus the complete contrast between the two flanks of India is due to a difference of climate; the one intensely arid and sterile, the hard rocky ground naked, the air clear and rainless, smitten alternately by swift heat and bitter cold; the other hot enough in an oppressive way, but moist, hidden under a blanket of cloud, the spongy ground pregnant with eager, pushing life, and hence covered with forest. To penetrate this barrage and reach the plateau country beyond, direct from India, is a difficult undertaking. There are few passes over the mountains, and they are mostly closed by snow for six or seven months in the year. There are no roads, only jungle paths, and hostile tribes are liable to put obstacles in the way of travellers. At first sight the river valleys appear to offer a means of passing through this belt, but the wide mouths by which they open on to the plain quickly contract to narrow gorges.

The forest itself is well worth examining in more detail. Up to an altitude of 5000 feet, it is of the kind known to botanists as hill jungle. The individual trees are very tall, often 150 feet, with smooth straight trunks and great crowns of branches at the top. At the base they are often supported by thin radiating buttresses like planks on edge. No two trees in contact are alike and there are a large number of different species. These forest giants support great creepers, which corkscrew up from below to fling themselves heavily over the crowns of the trees and hang down gracefully in a curtain of long festoons. Often these creepers pass from one tree to another,



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Epiphytic rhododendron grows freely on the larch and tsuga trees of the temperate rain forest at about 10,000 feet in the Mishmi Hills

forming a complicated sort of rigging, tying everything up in knots; it is these gigantic creepers which go far to baulk progress through the hill jungle, their spare coils cumbering the ground. Most baffling of all are the climbing palms or rattans, the thin tough stems of which may attain a length of several hundred feet and are sometimes covered with long sharp spines. A further complication, which helps to keep out all light and generally to bewilder the traveller, is added by the plants which perch themselves on the branches and even on the trunks of the big trees. These, mostly ferns, orchids and small shrubs, are often called parasites; they are not, however, parasites since they demand no food from the trees on which they perch themselves but only a share of the light and

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air, which their position enables them to snatch.

Besides the big trees, with their associated climbing and perching plants, there are smaller trees, forming a second roof. These include many palms and other curious-looking trees. Below these again are bushes and shrubs, while the ground itself is covered with large herbs, often having very big leaves. Thus it is impossible to see the ground, and the traveller who tries to make his way through the jungle finds himself blundering into all kinds of traps; branches slash him across the face and the steel bands of creepers press into his chest and hold him back. Obviously the only way to get through such jungle is to cut a path—a laborious job. The jungle too is alive with leeches, which smell the passer-by as they flicker to and fro on the leaves, stretching themselves at full length and swaying in circles of increasing radius. Being very slender, these leeches can easily pass through the mesh of a woollen stocking, beneath the spiral of a loosely wound puttee, or even through the eyelet of a boot. Ticks too are very troublesome, and so are blood-blister flies, every bite of which raises, as the name implies, a small irritating blood-blister. Worst of all, by reason of their bloodthirstiness and minuteness, are the sandflies which work by night as well as by day. The number and variety of bloodsucking animals is astonishing, for there are, in addition to the above, mosquitoes and two species of horsefly, a total of seven kinds of bloodsuckers.

An interesting fact about the forest belt is that it is a region of salt deficiency. On the plateau, to north and east, are brine wells, found in a belt of Devonian rocks which can be traced for hundreds of miles. On the plains to the south and west the sea is easily reached. Consequently both plains and plateau, having access to salt, can support a comparatively large population. Between the two is the forest belt, a tract of country about 150 miles wide, difficult to penetrate and devoid of salt. Now salt is absolutely necessary for the continuance not only of human but of animal life in general. It is therefore not surprising that the forest belt is very sparsely inhabited, and for the most part by backward people. The most progressive of these, like the Abor and Naga tribes, are precisely those which have been in the habit of raiding the plains. They have always, and justly, been accused of lifting cattle and taking away women and children to be sold into slavery, but we may be certain that they came primarily for salt. The Mishmis of the Lohit valley, on the other hand, who have always had more difficulty in getting salt, are amongst the most backward tribes. Since the British occupation of Assam and Upper Burma raiding has ceased, and the tribesmen have been persuaded to come down to the plains to trade in peace. The easiest way to bring a recalcitrant tribe to terms is to close the exits on to the plains and invest it. But while the tribes which live in the outer hills come down to the plains for salt, those which live in the hinterland go up to the plateau, crossing the snowy passes in the depth of winter, so great is their need. In this way established government on the plateau is able to control the tribes from the one side, and established government on the plains can control them from the other.

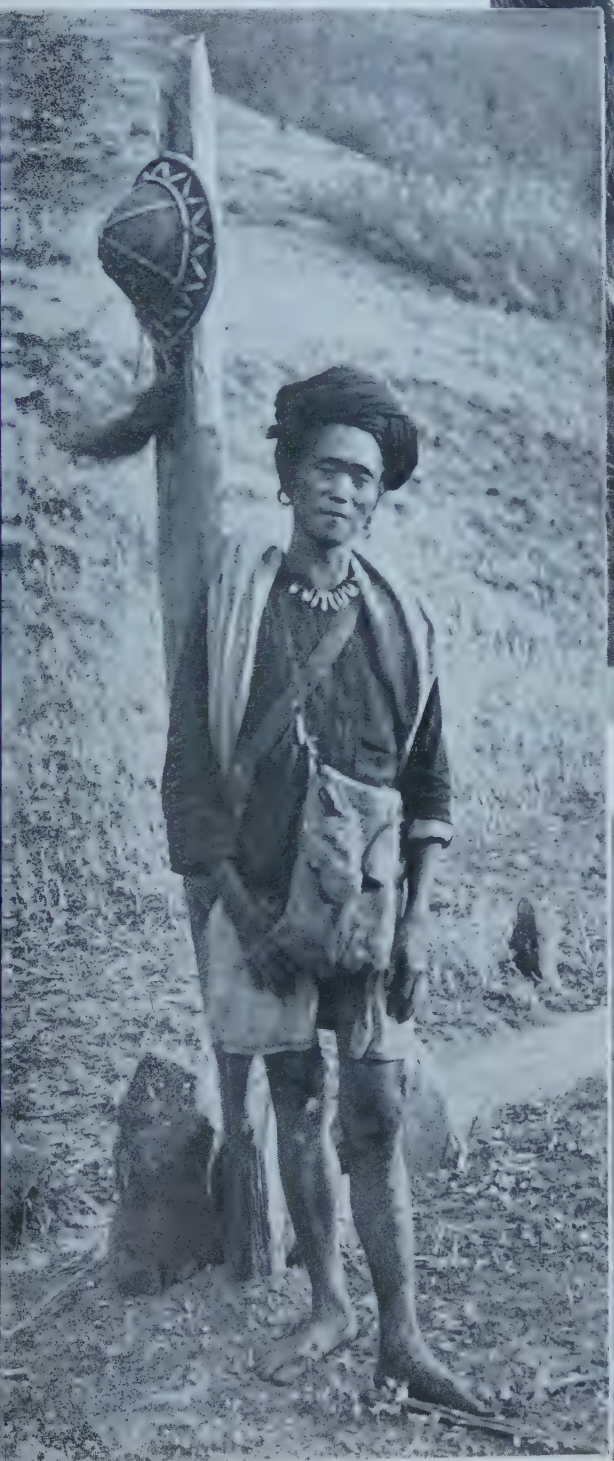
Apart from the fact that large numbers of tribesmen emerge from the forest belt annually to buy salt, the deficiency is made plain in several ways. In the deepest forest tracts, that is to say those furthest away from accessible markets, dwell an interesting pygmy tribe, the men averaging no more than 58 inches in height and the women rather less. This pygmy slave tribe is found on the headwaters of the Irrawaddy, and it is highly probable that their lack of stature is largely due to persistent under-nourishment and salt deficiency through many generations.

Again, the strange lack of big game in many parts of the forest belt can only be attributed to the complete absence of salt.

Photographs by F. Kingdon Ward

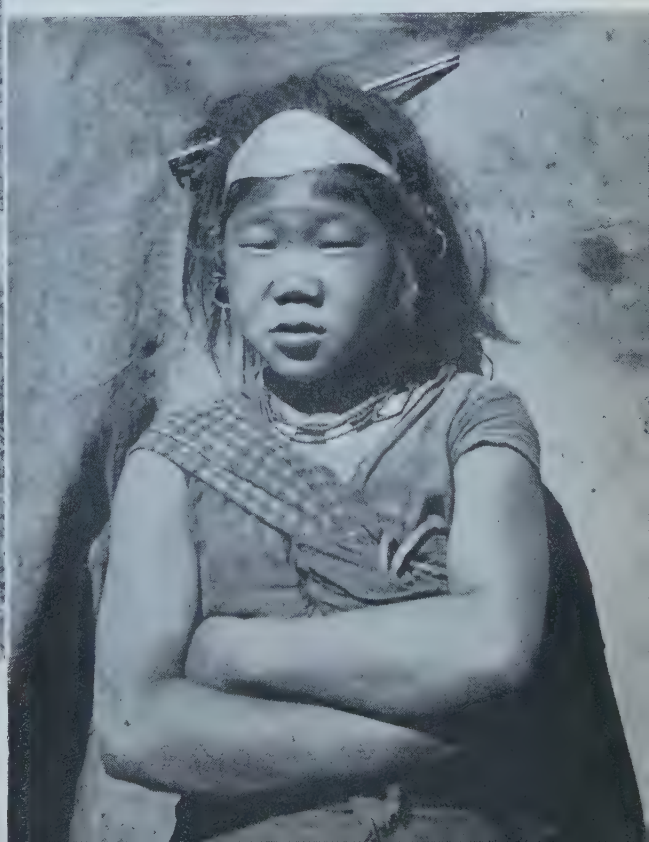
This sunlit vista on the Upper Irrawaddy gives no hint of the dangers and obstacles that lie beneath the surface of the jungle

re is a mediaeval air about the overhang-roofs of this Naga village in Upper Assam



Mishmi headman wearing a necklace of human teeth. e pole behind is adorned with the helmet of a murdered esman and was erected by the murderer to celebrate successful outcome of his feud

The silver forehead band and silver skewers through the hair are peculiar to the Mishmi girls



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This valley is at the upper limit of the trees. Beyond it lie only rock, snow and mist

Since the truce between hillmen and plainsmen, the tribes buy cattle on the plains to take back with them. To see these cattle in the jungle clearings away back in the hills, emaciated, glassy-eyed, prowling round the village with faltering step, is a never-to-be-forgotten spectacle. So great is their craving for salt that they will come up to the stranger without fear and lick his hands that they may get a taste of it. Here then is a ray of light on the matter of blood-sucking creatures. Blood contains salt; and it may be that creatures so diverse as the leech, the tick and the blister-fly have all been driven to obtain salt by this dubious method.

Thus salt plays a significant part in geography, since human beings cannot live without it. Its presence in the interior of a great land mass such as Africa or Asia determines trade routes; the control of brine wells, as in China, is a powerful factor in human relationships. Nearer the sea it ceases to play such a decisive part, though it is interesting to observe that in nearly every Oriental country, as well as in several European states, salt is a government monopoly. Salt is more acceptable than money to the hill tribes of Upper Burma and in parts of Africa is actually used as currency. Chinese dominion over some of the tribes in Yunnan is mainly due to the ability of the Chinese authorities to withhold or supply salt.

I have stated that the hill jungle extends to about 5000 feet altitude. Between 5000 and 7000 feet another type of forest prevails. Here there are fewer tropical species,

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At 13,000 feet the last of the silver firs are replaced by Alpine scrub. Beyond are the high mountains on the Burmese frontier

F. Kingdon Ward

These Tibetan cattle have been brought over the passes to the Western sources of the Irrawaddy. At this height they are above the normal tree line

and more deciduous broad-leafed trees. Conifers also make their appearance for the first time, and bamboos occur in great variety, making progress still more difficult. Here we find trees closely related to many of our European species; hence we may call this belt temperate rain forest. It differs considerably from hill jungle, but at least resembles it in being equally impenetrable. In the hills cultivation extends between 3000 and 7000 feet. Suitable slopes are chosen, the forest is felled during the driest season, only the very big trees being left standing (and they only because the natives have no means of felling them), and after a spell of fine weather the whole is set on fire. The charred timber is then cut up and carried off for firewood, the loose stones are gathered into heaps and the crops sown. In August the crop—maize or hill rice—is reaped and the clearing given over to a dense growth of weeds, brambles and quick-growing trees. Secondary jungle gradually obtains a hold; but it is eight or ten years before it can be felled and burnt again. Since a village obviously requires a considerable area of country for its support, land hunger is a constant source of clan warfare amongst some of the tribes. In the hills cultivation is seldom of a permanent character, being nearly always carried on by the wasteful method of clearings.

Thus the hill tribes of the North-East Frontier of India, wedged between plateaux and plains but secure in their forests, have always disputed the passage between the two; and, despite their dependence on both, have strengthened nature's obstacle and helped to keep Mongol and Aryan apart.

The Changing Face of Amsterdam

by F. R. YERBURY

SECRETARY OF THE ARCHITECTURAL ASSOCIATION

Mr. Yerbury is one of the most widely travelled men in the architectural world. His survey of working-class housing throughout Europe is to be published this spring. This article is the first of a series which will appear in The Geographical Magazine *dealing with the recent expansion of various great European cities, their housing problems and the manner in which each city is solving them.*

PRESENT-DAY Amsterdam offers one of the most interesting examples in Europe of a city of contrasts. Mediaeval in origin, although little of the mediaeval remains, it established itself as a city of international importance in the 17th and 18th centuries, and the survival of many buildings erected during this prosperous period lends a distinctive character to the older parts of the city, in sharp contrast to the newer quarters erected and built up almost entirely since the Great War.

Amsterdam has monuments of historic interest; it has buildings of equal interest in close proximity which are entirely modern and concerned with modern affairs. Its intersecting canals are leisurely navigated by barges brightly painted in primitive colours, while business-like bustling motor-buses travel along the banks. Its streets are busy with people in the accepted clothes of today, but here and there are seen folk, from fishing-villages and other places, in costumes of unchanged tradition. It has more bicycles than any other city in Europe, for every other person of its population rides one, and the main streets are filled with cyclists on their journeys to and from offices and shops. Occasionally these cyclists are held up to make way for a sleek motor-bus taking passengers out to Schiephol, one of the most important air ports in Europe, whence a Dutch aeroplane will convey them to Paris or London in less than two hours.

Canals are the dominating feature, for it is just as necessary to make canals in developing the city today as it was in the past; the same waterlogged condition of the soil which governed the making of the older city governs the making of the new. The earliest part of Amsterdam centres round the Dam and the district now occupied by the railway station. A glance at the map will show how this was developed and protected by a series of semi-circular canals or *grachts*, running almost parallel to each other, and by their dams preserving the low-lying land from the tides and encroachments of the river.

Amsterdam, like many of the capitals and important cities in Northern Europe, such as Stockholm, Copenhagen and Hamburg, is a port. Its chief activities have always been connected with the shipbuilding industry and shipping generally. The proximity of the Zuyder Zee while giving many advantages also provides many difficulties owing to the low-lying nature of the land here, as in other parts of Holland. Amsterdam's biggest problem has always been the control of water. The building of dams and the cutting of canals has resulted in the city being made up virtually of a series of small islands. The depth of these intersecting canals is not more than $3\frac{1}{2}$ feet and their water is kept reasonably fresh by constant renewal through an arm of the North Sea Canal which was cut from Amsterdam to Ijmuiden, giving direct access from the important docks to the North Sea.

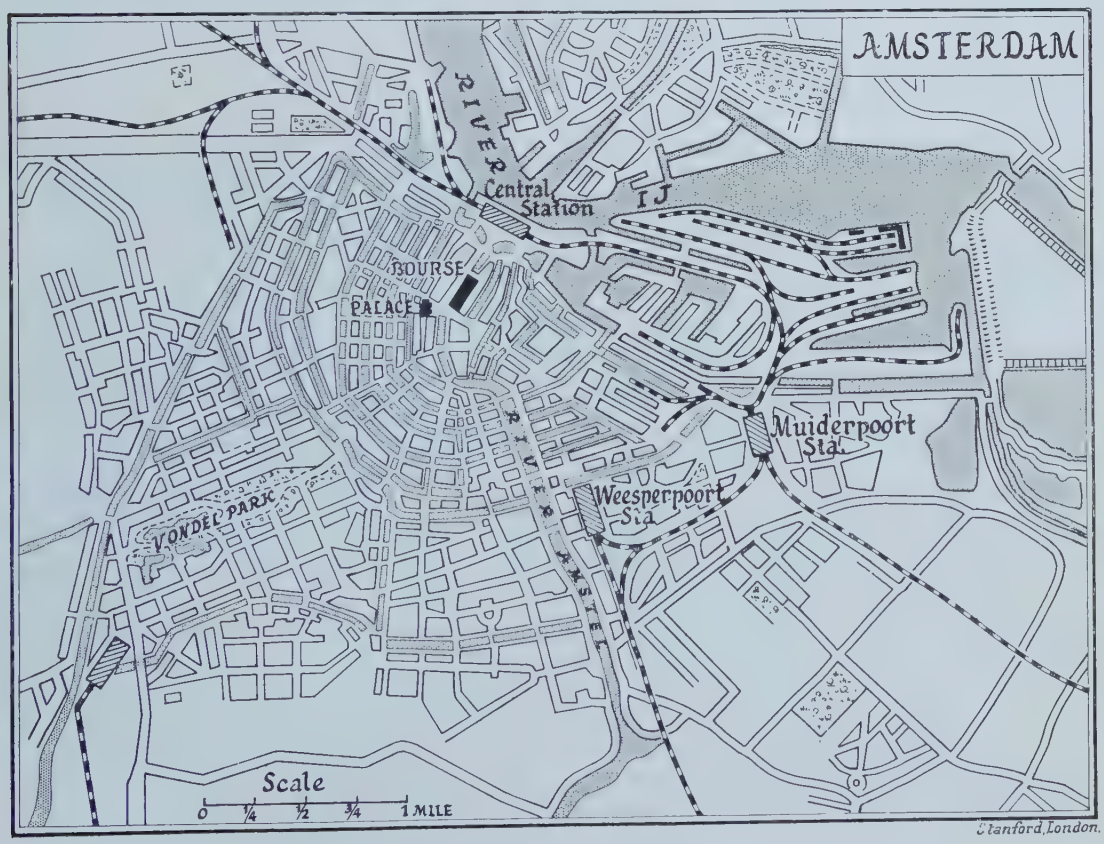
Tourist Information Bureau, The Hague

Churches and commercial buildings jostle each other along the quiet canals

Lining the *grachts*, which are joined to each other by smaller canals, are the houses of former merchants and important citizens. These noble buildings of generous proportions are essentially Dutch and have a different character from anything else in Europe. They vary in date but their structure is much the same. The earlier 17th-century buildings with their tall enriched gables lean comfortably on their 18th-century neighbours, the style of which influenced so much the Queen Anne and Georgian architecture of England. Both alike rely for their foundations upon piles driven deep into the marshy ground. Pile-driving in Amsterdam has always been necessary for building and still is, the only difference between present and past methods being that concrete is largely employed instead of timber.

In these fine old merchants' houses along the *grachts* the general construction was of timber. After the piles had been driven, a wooden platform was erected on the top of them and a timber-framed structure erected upon it. Door and window frames formed part of the structure and the large size of these features can be partly accounted for in this way. After the timber structure had been completed up to the roof, the façade was filled in with a thin skin of bricks. These were later treated from time to time with oil or tar as a preservative from the moisture which they would otherwise have absorbed from the damp atmosphere. This general treatment has given Amsterdam a rather sombre colour, but the traditional cream paint used on the woodwork of the windows and the green paint of the doors with their brightly polished surfaces relieves it considerably.

The interiors of many of these old houses



F. R. Yerbury

High gables and stoeps are typical of old Amsterdam

are interesting, and all follow much the same arrangement. The merchants living in them used the basements, the floors of which were not very far below the ground, for storage purposes and for kitchens. These basements were entered from a door under the steps or *stoeps* leading up to the main entrance of the house, which was above street level. This upper level afforded access to offices on the ground floor and the domestic quarters above. Many of the kitchens which still exist today are of special interest. The walls and floors are lined, as are some of the passages in the basement, with white marble, quantities of which were brought as ballast in the ships arriving in Amsterdam. Today most of these old houses are used entirely for commercial purposes, the earlier 17th-century ones being occupied as warehouses, but many of their features still influence the design of modern buildings.

The narrowness of their façades and the cramped nature of their sites often made internal planning difficult. One result of this was the evolution of precipitous staircases so difficult to negotiate as to make the carrying up of goods or bulky furniture impossible. Cranes had therefore to be introduced either in the gables or in the upper storey of almost every house, and large articles were hoisted and taken in through the windows. These cranes, so characteristic of Amsterdam, are still introduced into all the new blocks of flats, and staircases which make them essential are still constructed even in the newest buildings.

In the new quarters as in the old, brick has been the common material used in building. It is natural to Holland, as there are a considerable number of very good brick-fields in various parts of the country. The clay found in these produces bricks of a variety of colours. They are different from almost any other bricks found in Europe, and the ordinary $4\frac{1}{2}$-inch brick so well known in England is certainly never seen in Holland. Dutch bricks rarely if ever exceed $2\frac{1}{4}$ inches in depth and are sometimes made as thin as $1\frac{1}{2}$ inches. These small units give a special character to Dutch buildings, especially when used, as they often are, with a careful juxtaposition of colours. The same kinds of bricks are used for road-making, being bedded in sand both for the actual roads and for pavements. The impression given is that of completely brick streets, with buildings and roads of the same material.

The new buildings of Amsterdam are quite different in style from the old, but they harmonize with them in a remarkably satisfactory way. In all the new work there is just that subtle Dutch flavour which is due entirely to the conscious or unconscious influence of tradition. Modern Amsterdam owes little to the influence of other continental cities, where many of the new buildings are of an international rather than a national character. It is this influence of tradition, not so much in detail as in spirit, which maintains the special Dutch atmosphere of Amsterdam.

During the 19th century Amsterdam suffered aesthetically, like most European cities, from the advent of industrialism and indiscriminate and uncontrolled building.

Tourist Information Bureau, The Hague

The new quarters, like the old, are dominated by canals. Perhaps one day the new canal seen below will look as mellow as the sleepy gracht *above*

F. R. Yerbury

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The Amsterdam Bourse, built at the turn of the century by Dr. Berlage, marked also the turning-point in modern Dutch architecture

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The functional style of the open-air school seen above is more typical of Rotterdam and The Hague than of Amsterdam

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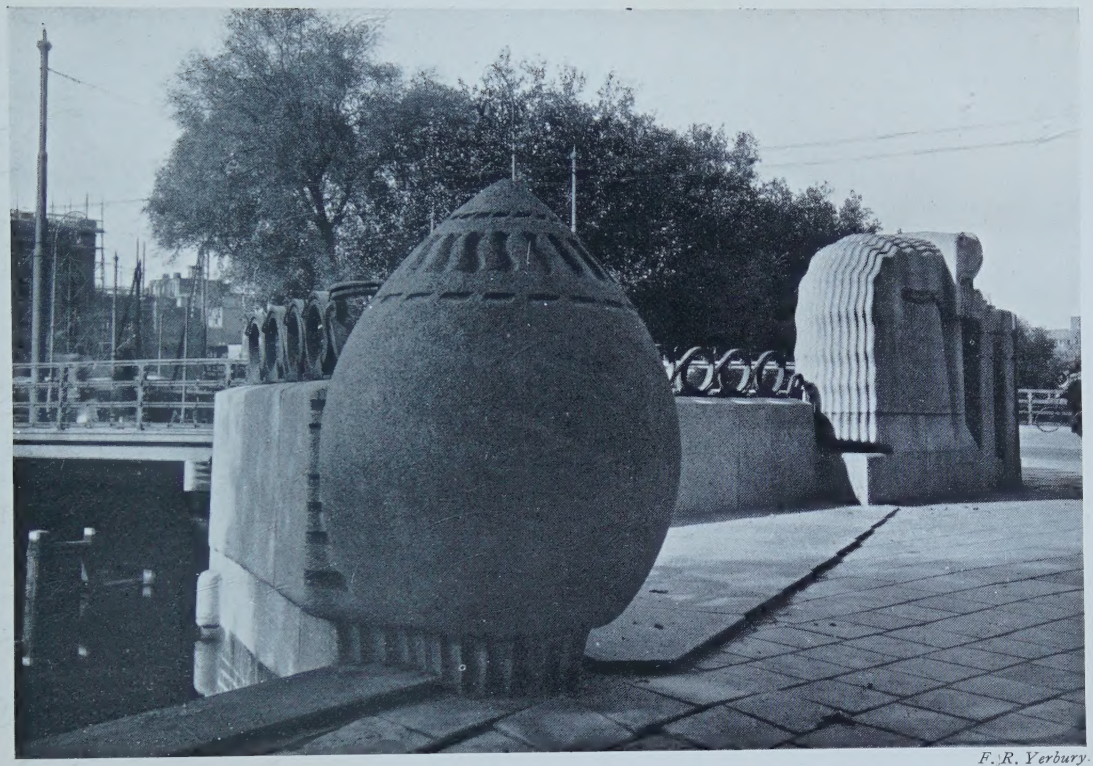
New York was once called New Amsterdam. Amsterdam of today also has its skyscrapers

It developed in a haphazard way ; streets were constructed on no particular plan and some of the old and congested quarters in the east were allowed to sink to slum conditions. Many of these picturesque but insanitary eastern quarters, with their narrow streets flanked by high toppling buildings and intersected by narrow canals, are scheduled by the city authorities for clearance. The removal of some of their dense population to newer quarters is already taking place, for the development of Amsterdam is now proceeding in accordance with a plan which embraces the whole district surrounding the city and includes the gradual clearance of its slum areas. This development plan was evolved almost immediately after the War, when the necessity for dealing with the housing shortage had to be faced. It is being consistently followed and is creating a new Amsterdam surrounding the old. The municipality has steadily pursued a policy of purchasing land as opportunity has occurred, both within and without the city, and has thus secured itself from the danger that land values might rise on account of its own enterprise. Its town-planning scheme is an ambitious one which will take many years to achieve, but it is being developed as necessity arises, and the making of roads or canals and the provision of housing is being carried out to a preconceived plan, resulting in sane and economical development. Ribbon development, such as is common in England in the neighbourhood of large towns, is unknown in Holland, partly on account of the control of development generally, but partly also because of the economic difficulty of developing land for building purposes except on a large scale.

The municipality by its post-War legislation has secured complete control over the design of all buildings erected in any part

F. R. Yerbury

Even modernism conforms to tradition in Amsterdam. These post-war flats retain in the upper storeys the curious cranes of the 17th-century houses



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The bridges over the new canals afford opportunities at once of pleasing the eye and of presenting the work of young sculptors

of the city—an action which has had a great effect not only in preserving the character of the older streets of the city, but also in making for orderliness and decency in building in the new. This control ensures that no building can be erected unless its design is passed by the committee set up by the municipality and takes into consideration the proposed situation and the street in which it is to be erected. Amsterdam has thereby maintained for itself a high level of building and has helped to win for Holland the distinction of being the only country in the world which has developed a modern architecture completely its own.

Amsterdam is proud of its modern buildings and rightly claims that it possesses in the Bourse, built in 1900–03, a building which has had considerable influence on modern European architecture. Certainly the Bourse may be regarded as the forerunner of modern Dutch architecture, and its effect upon the post-War building of Amsterdam cannot be doubted. Although new Amsterdam has many interesting commercial buildings, the new city, like the old, takes its real character from the domestic buildings, which are in many ways remarkable. In accordance with the town-planning policy, many new areas have been developed, particularly on the south side of the city and mostly for residential purposes. It is in these new quarters that something of the cities of the future can be visualized. Wide, tree-planted streets and canals bordered with flowers, bridges with sculptured piers, great blocks of flats, new schools and playgrounds form an astonishing contrast to the poorer parts of the inner city, and bear witness to the successful results of planning during a period in which the face of Amsterdam has undergone unprecedented changes.

To the Reader

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